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The Impacts of Functional Leadership, Authentic Leadership on Employee and Team Performance

CAI Zhenlan

Doctor of Management

Supervisors:

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University of Electronic Science and Technology of China

September, 2023



BUSINESS
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Declaration

I declare that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university and that to the best of my knowledge it does not contain any material previously published or written by another person except where due reference is made in the text.

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Abstract

With the rapid development of the economy, enterprise managers need to cultivate a new style of leadership to adapt to the current organizational environment. Especially with the new generation of employees entering the workplace constantly, managers need to coordinate the relationships between inside and outside the organization. Our study is aimed at exploring the impact of functional leadership on team performance as well as authentic leadership on individual performance, the mediating effect of team psychological capital between functional leadership and team performance and the moderating effect of team cohesion therein, the mediating effect of individual psychological capital between authentic leadership and individual performance, and the moderating effect of organizational identification therein.

Drawing on social cognitive theory and leadership contingency theory, we built up theoretical models at the team level and the individual level. We tested our hypotheses with 478 employee samples and 138 leader samples using SPSS 22.0 and Mplus 8.0 software. Our study showed that: (1) Functional leadership has a positive effect on team performance; (2) Team psychological capital mediates the relationship between functional leadership and team performance; (3) Team cohesion positively moderates the relationship between functional leadership and team psychological capital, and team psychological capital has a mediating effect therein; (4) Authentic leadership has a positive effect on individual performance; (5) Individual psychological capital mediates the relationship between authentic leadership and individual performance.

Our study enriches the relevant research of functional leadership and authentic leadership and provides management enlightenment to promote the practice of modern organization management.

Keywords: Functional leadership; authentic leadership; psychological capital; team cohesion; organizational identification

JEL: M1; M13

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Resumo

Com o rápido desenvolvimento da economia, os gestores de empresas precisam de cultivar um novo estilo de liderança para se adaptarem ao ambiente organizacional atual. Especialmente com a nova geração de funcionários entrando no local de trabalho, os gestores precisam de coordenar as relações entre o interior e o exterior da organização. O nosso estudo tem como objetivo explorar o impacto da liderança funcional no desempenho da equipa, o impacto da liderança autêntica no desempenho individual, o efeito mediador do capital psicológico da equipa entre a liderança funcional e o desempenho da equipa e o efeito moderador da coesão da equipa, o efeito mediador do capital psicológico individual entre a liderança autêntica e o desempenho individual e o efeito moderador da identificação organizacional.

Com base na teoria social cognitiva e na teoria da contingência da liderança, construímos modelos teóricos ao nível da equipa e ao nível individual. Testámos as nossas hipóteses com 478 funcionários e 138 líderes, utilizando os programas SPSS 22.0 e Mplus 8.0. O nosso estudo mostrou que: (1) A liderança funcional tem um efeito positivo no desempenho da equipa; (2) O capital psicológico da equipa medeia a relação entre a liderança funcional e o desempenho da equipa; (3) A coesão da equipa modera positivamente a relação entre a liderança funcional e o capital psicológico da equipa, onde o capital psicológico da equipa tem um efeito mediador; (4) A liderança autêntica tem um efeito positivo no desempenho individual; (5) O capital psicológico individual medeia a relação entre a liderança autêntica e o desempenho individual.

O nosso estudo enriquece a investigação relevante sobre liderança funcional e liderança autêntica e fornece implicações de gestão para o avanço da prática da gestão de organizações modernas.

Palavras-chave: Liderança funcional; liderança autêntica; capital psicológico; coesão da equipa; identificação organizacional

JEL: M1; M13

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摘要

随着经济的快速发展以及信息技术的进步与广泛应用，企业的管理者需要培养新型的领导风格以适应当下的组织环境，尤其是在新生代员工不断涌入职场的当下，管理者更需要兼顾与协调好组织内外之间的关系。本研究旨在探究功能型领导对团队绩效的影响，真实型领导对个体绩效的影响，团队心理资本在功能型领导与团队绩效之间的中介作用与团队凝聚力的调节作用，以及个体心理资本在真实型领导与个体绩效之间的中介作用与组织认同的调节作用。

本研究基于社会认知理论与领导权变理论，分别在团队层次与个体层次构建了理论模型。本研究基于 478 个员工样本与 138 个领导样本，并使用 SPSS 22.0 与 Mplus 8.0 软件进行模型假设检验。本研究发现：（1）功能型领导对团队绩效具有正向影响；（2）团队心理资本在功能型领导与团队绩效之间起到中介作用；（3）团队凝聚力正向调节了功能型领导与团队心理资本之间的关系，以及团队心理资本在其中的中介作用；（4）真实型领导对个体绩效具有正向作用；（5）个体心理资本在真实型领导与个体绩效之间起到中介作用。

本研究丰富了功能型领导与真实型领导的相关研究，并对推动现代组织管理的实践提供了一定的管理启示。

关键词：功能型领导；真实型领导；心理资本；团队凝聚力；组织认同

JEL: M1; M13

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Acknowledgements

My ideal is not big, only want to still be a teenager when I return from the past half of life. I hope there is a chance to re-understand the world and live up to youth.

Looking back on the four years of school life, the past is vivid. I remember the excitement and longing when I returned to campus four years ago. During the three years of online and offline classes on COVID-19, I was impressed by the professors' professional knowledge and infected by the students' enthusiasm for learning. During the three years, I answered questions and questions in several paper workshops, which was very helpful for paper writing. The thesis proposal was conceived from the initial management pain points, the direction of the proposal was determined, and the direction and ideas of the research hypothesis were refined by reviewing the literature research, and the research hypothesis model was initially formed. Then, multiple rounds of questionnaire survey were conducted using the internationally mature scale, and the data were sorted out and verified, and the research conclusion was finally formed. It was as if it had just happened, and although the writing process was difficult, the result was good.

First of all, I would like to thank the professors of the DOM project at the University of Electronic Science and Technology and the University College of Lisbon. During our PhD program, we experienced three years of unprecedented COVID-19, and most of the teaching time was completed according to the development of the epidemic. What impressed me the most was that the professors of the University of Lisbon gave face-to-face lectures after numerous COVID-19 tests in isolation. Special thanks go to my two tutors, Associate Professor Ana Margarida Passos and Professor Chen Lu. Associate Professor Ana Margarida Passos is a leading expert in human resource management and organizational behavior. She gave me meticulous guidance on the judgment of the topic selection direction and the grasp of the theory. She was very strict and meticulous on the research direction, theoretical model and data quality control. She also gave me key guidance on research model forming, questionnaire investigation and data statistical analysis and verification for many times. I would like to thank Associate Professor Ana for her illuminating guidance and careful guidance. In every video conference, she always gives me encouragement and motivates me to keep going. Like Associate Professor Anna, Professor Chen Lu gave me a lot of guidance and help in researching theories and methods. In the key nodes of paper writing, Professor Chen Lu can always help me answer

doubts with professional guidance, and feedback the key points that need attention in the paper. When I encountered the bottleneck of the paper, especially the statistical data verification analysis gave me a great help. In addition, when I encountered many puzzles in management practice, she gave me a lot of management advice, which has a great inspiration for my management work. My study career can get the guidance and help of these two tutors, to successfully complete the writing of the thesis, is the greatest blessing of my life!

My father, while I was writing my thesis, was diagnosed with terminal cancer. During more than a year of treatment, he kept his pain to himself and tried not to cause me any trouble. My husband accompanied me through numerous hospitalizations and chemotherapy treatments. I was ashamed that I only got to see him every day during the 49 days of ICU coma. He is a great father, and I am very grateful to him for insisting on sending my sister and me to college even though he is not rich, so that I can have the doctoral experience I have today. Thanks to my sister, who took the initiative to take care of my mother after my father fell ill. My mother suffers from senile dementia and cannot take care of herself in many things in life. My sister took care of me in every possible way without complaining, allowing me to have time and energy to complete my thesis. The last person I want to thank is my husband. In the process of writing my thesis, in addition to being busy with the matters of the unit, he also went all out to take care of his father and children at home, no matter what. It is his love and encouragement that let me study at ease and become my spiritual pillar on the way forward. There are so many people and things to be thankful for at this moment that I can't express my gratitude all at once.

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理想不大，只愿年过半百，归来仍是少年，希望还有机会重新认识这个世界，不负韶华。

回想四年的求学之路，往事历历在目。曾记得四年前重回校园的兴奋和憧憬，三年的新冠疫情线上和线下课堂上被教授们的专业知识所折服，同时被同学们的学习热情所感染，期间多次的论文工作坊的解疑答惑对论文写作非常有帮助。从最初的管理痛点着手构思论文的开题，确定了开题方向后通过对文献研究推敲锤炼论文研究假设的方向和思路，初步形成了研究假设模型，然后利用国际上成熟的量表进行多轮问卷调研，并对数据进行了整理验证最终形成了研究结论。这一切仿佛就像刚刚发生一样，虽然写作的过程很艰辛，但是结果是美好的。

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我的父亲，在我论文写作过程中，他的身体被查出来癌症晚期，在一年多的治疗期间他自己扛着病痛的折磨不吭一声尽量不给我添麻烦，期间无数次的住院和化疗都

是我爱人陪同下完成的，我很惭愧只有在临终的 49 天的 ICU 昏迷期间每天能看上他一眼。他是一位伟大的父亲，我很感谢他能在经济不富裕的情况下坚持将我们姐妹俩供上大学，才有了我今天的读博经历。感谢我的姐姐，在我的父亲生病后主动承担起了照顾母亲的责任，我的母亲患有老年痴呆，生活上很多事情不能自理，我的姐姐毫无怨言无微不至的照顾，让我有时间和精力完成我的论文。最后我要感谢的是我的爱人，在我论文写作过程中，他除了忙单位的事项外，更是全力以赴承担了家里照顾父亲和孩子的事情，事无巨细，正是有了他的爱和鼓励，让我安心学习，成为我前进路上的精神支柱。此刻还有很多需要感谢的人和事，无法一一来表达感谢了。

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Chapter 1: Introduction

This chapter firstly elaborates the research background from the realistic and theoretical level, and proposes the research objectives and research questions under this background, and explains the main research methods and research routes according to the research questions. Finally, the content structure of the paper is explained.

1.1 Research background

1.1.1 Practical background

With the development of economy and information technology, the market environment is more complex and changeable, and the international competition is increasingly fierce, thus opportunities and threats coexist for enterprises. People management has been always the core and focus of organizational management. For managers, taking effective management ways to maintain and improve employee performance is an important issue that they have to face. Meanwhile, in order to adapt to the complex organizational environment, team work has been the basic form of organizational management in the practice to respond to the rapidly changing external environment and achieve organizational goals (S. W. J. Kozlowski & Bell, 2013). Early survey shows that 91% of high-level managers agreed that teams are central to organizational success (Martin & Bal, 2015). Therefore, managers should attach great importance to not only individual performance but also team performance.

In the recent years, many new generation employees enter workforce and gradually become the backbone in workplaces, provide new energy for the development of enterprises. In the meantime, they also bring great challenges to organizational management. New generation employees refer to those who were born after 1980. Other terms are used: “Generation Y”, “Millennials”, “digital natives”, and “Net Generation”. They grew up in the environment with the internet and tend to keep inclusive attitudes towards various values and cultures. Therefore, new generation employees are more comfortable with modern technologies than other previous generations (Smith, 2010), and can better adapt to change (Hart & Brossard, 2002). At the same time, there are difference between new generation employees and previous generations on values, attitudes, behaviors and expectations (Eisner, 2005). Previous studies have shown that

the characteristics of new generation employees are seen as more confident, independent, self-centered, open and transparent. They pay attention to the sense of autonomy and a high degree of involvement (Zhou, 2007), and look for collective management style, a supportive culture and a positive work environment (Guillot-Soulez & Soulez, 2014). Therefore, the management difficulties of organizations also increase because of the increase of new generation employees in workplaces,

Leadership serves as an important external factor that has significant effect on both team performance (Bachrach & Mullins, 2019) and employee performance (Hannah et al., 2016). Traditional leaders tend to adopt “top-bottom” leadership styles, expecting teams and employees to obey and finish what they required by the means of plan, guidelines and information. However, as the time goes, new generation employees increasingly become the major part of enterprises and have the higher demand for transparency and self-development. Traditional leadership cannot satisfy the need of modern organizational management. Therefore, organizational management calls on “bottom-up” new styles of leaderships. For example, at the team level, functional leadership is centered on goal-oriented leadership activities that tend to focus on promoting team process and team needs which are likely to drive team effectiveness (Morgeson et al., 2009; J. P. Santos et al., 2015). At the individual level, authentic leadership is an leadership style for developing an internalized moral and ethical perspective, balanced sense of information processing, leader’s transparent relationship with followers, and nurturing self-awareness and self-development (Walumbwa et al., 2008). Therefore, functional leadership and authentic leadership are effective leadership styles that can satisfy new generation employees’ personal need in modern organizations.

Given the significance of the functional leadership and authentic leadership and their important influence on team and individual performance, it is necessary to investigate the influence mechanism and boundary condition of functional leadership on team performance at the team level as well as those of authentic leadership on individual performance at the individual level. We will further reveal the importance and significance of functional leadership and authentic leadership by test empirically the relationship between functional leadership and team performance as well as that between authentic leadership and individual performance. The research conclusions will provide managers with effective and targeted management advice of improving team and individual performance by positive leadership.

1.1.2 Theoretical background

Team and individual performance have been always the research focus in the field of organizational management. Recently, many studies focus on the effect and mechanism of positive leadership on team and individual performance (Breevaart et al., 2016; Reb et al., 2019; F. Yang et al., 2019). Because of the increasing complexity of internal and external environment that enterprises face, some new styles of leaderships arise to help deal with various problems and challenges in organizations. Meanwhile, more and more scholars begin to attach great importance to the research on new styles of leaderships such as functional leadership and authentic leadership. However, there are some limitations on the research of relationship between functional leadership and team performance as well as that between authentic leadership and individual performance.

First, although previous studies have explored the effect of authentic leadership on individual and team performance (Duarte et al., 2021; Lyubovnikova et al., 2017; Xiong & Fang, 2014), the research of functional leadership is at the emerging stage and focuses on theoretical studies of notion and characteristics, few studies investigate the effect of functional leadership on performance. In addition, although many studies have discussed the effects and mechanisms of leadership on team and individual performance respectively, there is a lack of the multilevel research that integrates team level and individual level, especially the multilevel research on authentic leadership and functional leadership. Currently, the science community of organizational management emphasized that the study of leadership is inherently multi-level in nature (Bliese et al., 2002), and many scholars have discussed the effects of leadership at both team and individual level (Braun et al., 2013; Rahmadani et al., 2020; J. Yang et al., 2017). Therefore, examining the effects of functional leadership and authentic leadership on team and individual performance from the viewpoint of multilevel enrich not only the research of the relationship between the new style of leadership and performance, but also the multilevel research of leadership theory.

Second, many researches indicated that psychological capital mediates the relationship between leadership and employee performance (S. W. Chen & Peng, 2021; Jiao & Lee, 2021). Although some scholars have discussed the effect of team psychological capital on the relationship between leadership and team performance (Rego et al., 2019), the relevant studies are scarce. Additionally, previous studies have explored the mediating effect of psychological on the relationship between authentic leadership and individual performance (Y. Hu et al., 2018; S. J. Peterson et al., 2012; Rego et al., 2012), but the theory explaining is homogenous, and few

studies considered the characteristics of new generation employees and the relationship between new generation employees and their leaders. What's more, the research on the mediating effect of team psychological capital on the relationship between functional leadership and team performance is rarer, Therefore, it is necessary to explore the mediating effect of team psychological capital between functional leadership and team performance as well as that of individual psychological capital on the relationship between authentic leadership and individual performance.

Finally, we discussed the moderating effect of team cohesion at the team and organizational identification at the individual level. Team cohesion has been regarded as an important contextual variable that affects team process at the team level (Ha & Ha, 2015; S.-L. Wang & Hwang, 2012). In a cohesive team, members develop strong psychological bonds with one another as well as with the team. At the individual level, individuals with high organizational identification are more likely to be psychologically connected to their jobs (E.-S. Lee et al., 2015). However, previous studies have rarely discussed the moderating effect of team cohesion on the relationship between leadership and team outcomes at the team level. Similarly, at the individual level, few studies have explored the moderating effect of organizational identification on the relationship between leadership and individual outcomes. Therefore, investigating the moderating effect of team cohesion between functional leadership and team performance as well as that of organizational identification on the relationship between authentic leadership and individual performance will further discover the boundary conditions of our model and enrich the research of team cohesion and organizational identification to some extent.

1.2 Research purpose and questions

1.2.1 Research purpose

Our research considered the important issues of functional leadership and authentic leadership in the field of leadership from the practical point of new generation employees and team management, carrying out theoretical and empirical research systematically and scientifically on the relationship between functional leadership and team performance as well as that between authentic leadership and individual performance. The aim of this research includes three aspects: First, the research will clear the definition and nature of functional leadership and authentic leadership. Next, based on the multilevel leadership theory framework, the research will build

the mediation and moderation model of the relationship between functional leadership and team performance as well as that between authentic leadership and individual performance. Finally, the research will empirically test the theoretical model and come to conclusions by the samples from questionnaire collection and put forward solutions according to management practices.

1.2.2 Research questions

We raised the following questions around the research goals:

- (1) At the team level, how does functional leadership affect team performance?
- (2) At the individual level, how does authentic leadership affect individual performance?
- (3) How does team psychological capital mediate the relationship between functional leadership and team performance? How does team cohesion moderate the relationship between functional leadership and team performance?
- (4) How dose psychological capital mediate the relationship between authentic leadership and individual performance? How does organizational identification moderate the relationship between authentic leadership and individual performance?

1.3 Research method

This research will use both qualitative and quantitative methods. Specifically, the methods of literature review, survey-based field study and statistical analysis will be used in our research.

(1) Literature Review

We will make the most use of databases such as Elsevier, Science Direct, Springer Link, ProQuest, and CNKI, collecting and reviewing relevant research on functional leadership, authentic leadership, psychological capital, team cohesion, organizational identification, and team and individual performance. We will summarize all variables' antecedents, outcomes and relevant theories.

(2) Survey-Based Field Study

We will collect first-hand data by questionnaires survey and test our model by empirical study. The items of questionnaires will include demographic variables, functional leadership, authentic leadership, psychological capital, team cohesion, organizational identification, team and individual performance. Based on the definitions of variables, we will use authoritative scales that are acknowledged by scholars to ensure the construct validity. To ensure the validity of samples and reduce common method bias, we will collect data from different sources and

different points. All the above questionnaires will be distributed to new generation employees and leaders in Chinese enterprises.

(3) Statistical Analysis

The software such as SPSS and Mplus will be used for descriptive statistics, data aggregation analysis, reliability and validity analysis, correlation analysis. Additionally, we will test our hypotheses by structural equation model and hierarchical linear model.

1.4 Research path and structure

1.4.1 Research path

The main tasks of this thesis include: (1) reviewing literature of the main variables' important contents such as definition, measurement and theories; (2) building research model, providing scientific and reasonable theory explaining and hypotheses; (3) examining the influence mechanisms and boundary conditions of functional leadership on team performance as well as those of authentic leadership on individual performance.

The research path is shown in Figure 1.1.

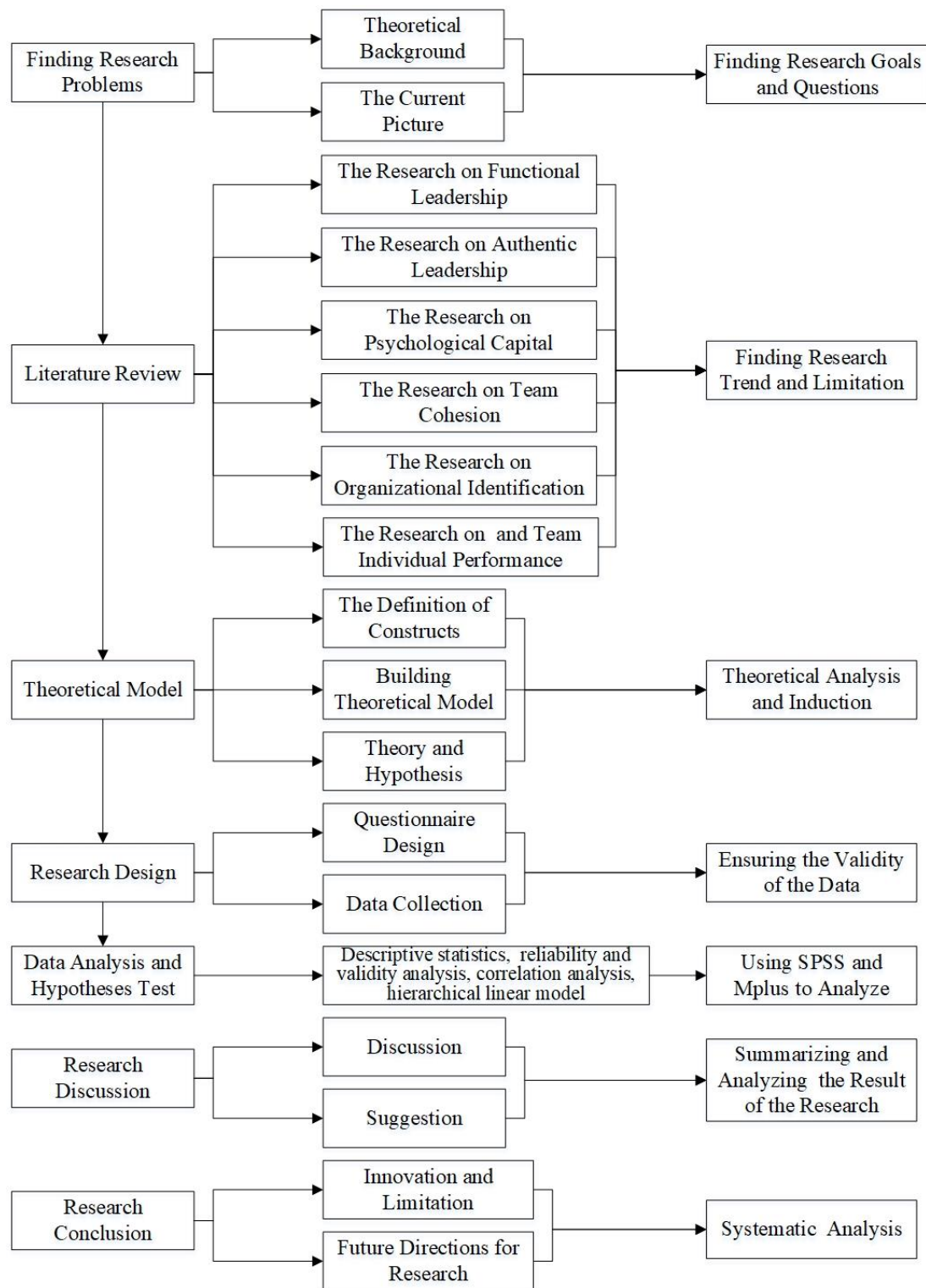


Figure 1.1 Research path

1.4.2 Research structure

The thesis includes the following chapters:

Chapter 1: Introduction. First, we introduced the research background, which includes the current picture and theoretical background. Next, we revealed the research goals and questions. Finally, we indicated the research path and structure.

Chapter 2: Literature Review. First, we summarized the relevant research on main variables, including functional leadership, authentic leadership, psychological capital, team cohesion, organizational identification, individual and team performance. Then, we analyzed the status quo and limitation, and clear the direction of research.

Chapter 3: Theory and Hypotheses. According to relevant theoretical research, we defined functional leadership, authentic leadership, psychological capital, team cohesion, organizational identification, and team and individual performance, thus build a multilevel leadership model. According the research model, we provided hypotheses based on theoretical analysis at both team and individual level. Specifically, at the team level, the hypotheses include the relationships among functional leadership, team psychological capital, and team performance, the mediating effect of team psychological capital, and the moderating effect of team cohesion. At the individual level, the hypotheses include the relationships among authentic leadership, psychological capital, and individual performance, the mediating effect of psychological capital, and the moderating effect of organizational identification.

Chapter 4: Research Method. First, we introduced the sources of samples and collection process. Next, we clarified the questionnaire design, which includes the measurements of functional leadership, authentic leadership, psychological capital, team cohesion, organizational identification, team and individual performance.

Chapter 5: Research Results. According the logic and steps of empirical study, we first did some basic analysis such as descriptive statistics, data aggregation analysis, reliability and validity analysis, correlation analysis, then we used structure equation model and hierarchical linear model to test hypotheses.

Chapter 6: Discussion and Conclusion. According the results of empirical study, we discussed the results of hypotheses test and drew conclusions. The chapter includes research conclusion, key innovations, contribution, limitation and future directions for research.

1.5 Summary

This study is situated within the context of modern organizational management, with a focus on understanding the dynamics between new-generation employees and their leaders. By examining the relationship between these two entities, the study seeks to identify and address existing challenges in team and individual performance management within contemporary organizations. Emphasis is placed on recognizing the importance of adopting new leadership styles to navigate these challenges effectively.

The research specifically explores the connections between functional leadership and team performance, as well as authentic leadership and individual performance. By posing relevant research questions, the study aims to uncover the intricate mechanisms influencing team performance at the team level under functional leadership and individual performance at the individual level under authentic leadership. This exploration is approached through the lens of multilevel leadership theory, providing a comprehensive understanding of leadership's impact across different organizational levels.

To achieve its objectives, the research employs a mixed-methods approach, integrating both qualitative and quantitative research methods. The initial phase involves an extensive literature review that spans key topics such as functional leadership, authentic leadership, psychological capital, team cohesion, organizational identification, and team and individual performance. This comprehensive review establishes the theoretical foundation for the study.

The empirical phase of the research entails the collection of real-world data through a structured questionnaire survey. The collected data will be subjected to rigorous empirical analysis and testing, allowing for a nuanced understanding of the relationships and dynamics identified in the literature review. This evidence-based approach enhances the study's validity and provides practical insights into the challenges and opportunities associated with contemporary organizational management.

This study takes modern organizational management as the research background, combines the characteristics of the new generation employees and the relationship between the new generation employees and their leaders, and finds the existing problems on team and individual performance management in current organizations as well as the importance of new styles of leadership. This research explores the relationship between functional leadership and team performance as well as that between authentic leadership and individual performance and raises relevant research questions. This research aims at examining the influencing mechanism and boundary conditions of functional leadership on team performance at the team level and those

of authentic leadership on individual performance at the individual level from the viewpoint of multilevel leadership theory. This research will adopt both qualitative and quantitative research methods, to review the relevant literature on functional leadership, authentic leadership, psychological capital, team cohesion, organizational identification, team and individual performance and other major research variables. What's more, the research conducts empirical analysis and test based on the real data collected from the questionnaire survey. Finally, the research path and structure are given.

In conclusion, the research not only contributes to the academic understanding of leadership and performance management but also offers valuable insights for practitioners and organizations seeking to optimize their operational efficiency. The study concludes by presenting a clear research path and structural framework, consolidating the findings and recommendations for future research and practical implementation.

Chapter 2: Literature Review

This chapter reviewed researches on functional leadership, authentic leadership, psychological capital, team cohesion, organizational identification, and performance, then summarizes the current status and limitations of existing researches.

2.1 Research on functional leadership

2.1.1 Definition and measurement

Functional leadership has always been a perspective to examine the role of team leadership (Maynard et al., 2017; Morgeson et al., 2009). Different from leader-centered views, functional leadership shift the focus from team leaders to the leadership processes within a team (Morgeson et al., 2009; J. P. Santos et al., 2015). According to functional leadership theory, leader's main job is "to do, or get done, whatever is not being adequately handled for group needs" (McGrath, 1962). In other words, functional leaders should facilitate team success by changing the demands and needs of the environment, task, and team members into their own behavior (Morgeson et al., 2009; Zaccaro et al., 2001). Functional leadership lays emphasis on what needs to be done rather than what should be done (Barnett & McCormick, 2016; Hackman & Walton, 1986; Zaccaro et al., 2001), it argues that when critical functions to team's success are taken into consideration, leaders' behaviors are effective (McGrath, 1962). Thus, the functional leadership perspective attempts to identify behavioral sets which accomplish key group functions, rather than specific leadership behaviors (Hackman & Walton, 1986).

Many scholars have developed taxonomy for functional leadership. For example, Hackman and Walton (1986) proposed that two core functions for leaders were monitoring and taking action and provided a model to explain how leaders promote team effectiveness based on the functional leadership conceptualization by McGrath (1962). With that, Fleishman et al. (1991) argued that functional leadership include information search and structuring, information use in problem solving, managing personnel resources, and managing material resources. Besides, Stetler et al. (2014) investigated in functional leadership and identified four kinds of behaviors, including inspiring and inducing, intervening actively and involving one's self in evidence-based practice, educating or developing and Role modeling, and monitoring/providing feedback

or seeking insights and Implementing specific evidence-based practice projects. J. P. Santos et al. (2015) classified functional leadership into situation clarification functional leadership, strategy clarification functional leadership, and team coordination functional leadership. Situation clarification function refers to helping team members understand the context of the task problem they face by promoting a shared assessment of the situation, stimulating and fostering mission analysis and goal specification. Strategy clarification function refers to stimulating and fostering the team processes of strategy formulation and planning using the team's assessment of the previous problem situation. Coordination function is a broad concept that encompasses a leader's promotion of the team processes of mutual monitoring, backup behaviors, monitoring progress toward goal attainment, and the synchronization of team members' interdependent activities. They also developed functional team leadership scale (FTLS), which consisted of three dimensions and 13 items. On the basis of summarizing literature on functional leadership, Morgeson et al. (2009) articulated 15 kinds of behaviors. They argued that the temporal cycles of goal-directed activity could be divided into two distinctive phases: transition phase and action phase. In the transition phase, leaders should compose team, define mission, establish expectations and goals, structure and plan, train and develop team, provide sensemaking, and provide feedback. In the action phase, it is leader's function to monitor team, manage team boundaries, challenge team, perform team task, solve problems, provide resources, encourage team self-management, and support social climate. Based on these behaviors, they also developed the team leadership questionnaire (TLQ), consisting of 15 dimensions and 82 items.

Meanwhile, instead of drawing on functional leadership theory, some studies tend to give their own definitions and measures in a particular context (S. W. J. Kozlowski et al., 2016). For example, DeChurch and Marks (2006) investigated in functional leadership in multi-team system (MTS). They defined MTS functional leadership as monitoring and communicating critical cross-team information to component teams and developed a six-item scale for functional multiteam system leadership. Eseryel et al. (2020) explored leadership in self-managing virtual teams and defined functional leaders here as those who influence others by reinforcing existing shared mental models and shared norms, thus reinforcing the structures that guide the actions of team members. Carter et al. (2020) reviewed functional leadership in inter-team contexts and proposed that leadership can be functionally defined as meeting the needs of the team and/or the system to enable goal-fulfillment.

In sum, there are many taxonomies for functional leadership, and the contexts are different from each other, as shown in Table 2.1. Some scholars have tried to develop scales for functional

leadership in their empirical studies, but none of them were adopted in following studies. In this research, we measured functional leadership using 13-items scale developed by J. P. Santos et al. (2015). The scale includes three aspects: situation clarification functional leadership, strategy clarification functional leadership, and team coordination functional leadership. Among these items, situation clarification functional leadership includes 3 items, sample items are “The leader defined correctly the team's task” and “The leader explained the purpose of the team's task”. Strategy clarification functional leadership includes 5 items, sample items are “The leader presented a strategy for solving the problem”, “The leader encouraged the team members to suggest strategies for solving the problem” and “The leader promoted a verbal discussion to ensure that all the team members understood the plan and their respective roles”. Team coordination functional leadership includes 4 items, sample items are “The leader monitored the team's execution of the task, keeping the team informed about its performance” and “The leader stimulated mutual support and assistance within the team for members having difficulties”.

Table 2.1 Taxonomy, definition, and scale of functional leadership

| Author (s) | Taxonomy | Definition | Scale |
|---------------------------|---|------------|-------------------------|
| Hackman and Walton (1986) | Monitor and take action | | |
| Fleishman et al. (1991) | Information search and structuring, information use in problem solving, managing personnel resources, and managing material resources | | |
| Stetler et al. (2014) | Inspiring and inducing, intervening actively and involving one's self in evidence-based practice, educating or developing and Role modeling, and monitoring/providing feedback or seeking insights and implementing specific evidence-based practice projects | | |
| Morgeson et al. (2009) | Transition phase: compose team, define mission, establish expectations and goals, structure and plan, train and develop team, provide sensemaking, and provide feedback. Action phase: monitor team, manage team boundaries, challenge team, perform team task, solve problems, provide resources, encourage team self-management, and support social climate. | | 15 dimensions, 82 items |

| | | |
|----------------------------|--|--|
| J. P. Santos et al. (2015) | <p>Function leadership consists of situation clarification functional leadership, strategy clarification functional leadership, and team coordination functional leadership.</p> <p>Situation clarification function refers to helping team members understand the context of the task problem they face by promoting a shared assessment of the situation, stimulating and fostering mission analysis and goal specification.</p> <p>Strategy clarification function refers to stimulating and fostering the team processes of strategy formulation and planning using the team's assessment of the previous problem situation.</p> <p>Coordination function is a broad concept that encompasses a leader's promotion of the team processes of mutual monitoring, backup behaviors, monitoring progress toward goal attainment, and the synchronization of team members' interdependent activities.</p> | Functional Team Leadership Scale (FTLS) 3 dimensions, 13 items |
| DeChurch and Marks (2006) | <p>Multiteam system functional leadership is defined as monitoring and communicating critical cross-team information to component teams.</p> | Functional Multiteam System Leadership |
| Carter et al. (2020) | <p>Leadership in inter-team context is functionally defined as meeting the needs of the team and/or the system to enable goal-fulfillment.</p> | |
| Eseryel et al. (2020) | <p>In self-managing virtual teams, functional leaders are those who influence others by reinforcing existing shared mental models and shared norms, thus reinforcing the structures that guide the actions of team members.</p> | |

2.1.2 Antecedent, consequence, and influencing mechanism

Although the theoretical approach of functional leadership has enormous potential, many conceptual models have not been empirically tested, and thus conceptual understanding for

functional leadership has exceeded empirical evidence (Barnett & McCormick, 2016; J. P. Santos et al., 2015).

With regard to the antecedents of functional leadership, previous studies have focused on training program. DeChurch and Marks (2006) confirmed that strategy training and coordination training could cultivate functional leadership in multiteam system. Besides, J. P. Santos et al. (2015) found that leadership training program has positive influence on leader's situation clarification function, strategy clarification function, and coordination function.

About the consequences, meanwhile, DeChurch and Marks (2006) tested that functional leadership in multiteam system could enhance inter-team coordination and multiteam system performance. J. P. Santos et al. (2015) demonstrated that leader's situation clarification function, strategy clarification function, and coordination function have positive effects on team effectiveness.

Besides, Maynard et al. (2017) found that during organizational change, action phase functional leadership moderated the positive relationship between team human capital and post-change team performance.

2.1.3 Research comment

Although previous studies have fully explained functional leadership's definition, dimensions, and nature. However, the research on functional leadership's antecedents, outcomes and mechanisms still lack the empirical test. Therefore, more research needs to be conducted to expand out knowledge about functional leadership.

2.2 Research on authentic leadership

2.2.1 Definition

Authentic leadership is a new type of leadership which not only is genuine and values-base, but could rebuild the confidence, hope and optimism of subordinates as well. Authentic leaders are individuals with integrity, and aim to build a real relationship with subordinates. Therefore, it has been widely discussed and studied in academic circles. Generally, research on authentic leadership can be divided into two categories: trait/behavior view and process view. The former defines authentic leadership from leader's trait and behavior, while the latter explains authentic leadership from the perspective of leadership process.

The trait/behavior view identifies key traits and behaviors of authentic leaders, as shown in

Table 2.2. For example, B. J. Avolio, Gardner, et al. (2004) defined authentic leaders as “those individuals who know who they are, what they think and behave and are perceived by others as being aware of their own and others' values/moral perspective, knowledge, and strengths; aware of the context in which they operate; and who are confident, hopeful, resilient, and of high moral character.” Besides, George and Sims (2007) argued that authentic leaders are “genuine people who are true to themselves and to what they believe in. They engender trust and develop genuine connections with others. Because people trust them, they are able to motivate others to high levels of performance. Rather than letting the expectations of other people guide them, they are prepared to be their own person and go their own way. As they develop as authentic leaders, they are more concerned about serving others than they are about their own success or recognition.” Furthermore, Walumbwa et al. (2008) regarded authentic leadership as “a pattern of leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development.”

However, Shamir and Eilam (2005) argued that above-mentioned definitions neglected the interaction between leaders and subordinates. Thus, they defined authentic leadership from the perspective of leadership process. Specifically, they implied that “authentic leaders can be distinguished from less authentic or inauthentic leaders by four self-related characteristics: 1) the degree of person role merger i.e. the salience of the leadership role in their self-concept, 2) the level of self-concept clarity and the extent to which this clarity centers around strongly held values and convictions, 3) the extent to which their goals are self-concordant, and 4) the degree to which their behavior is consistent with their self-concept.” Besides, Luthans and Avolio (2003) also believed that authentic leadership in organizations is a process that “draws from both positive psychological capacities and a highly developed organizational context, which results in both greater self-awareness and self-regulated positive behaviors on the part of leaders and associates, fostering positive self-development. The authentic leader is confident, hopeful, optimistic, resilient, transparent, moral/ethical future-oriented, and gives priority to developing associates into leaders themselves. The authentic leader does not try to coerce or even rationally persuade associates, but rather the leader's authentic values, beliefs, and behaviors serve to model the development of associates.”

Although there exist two different views in the conceptual development of authentic leadership, previous studies find no substantive conflict between these two views. Therefore, there is no strict distinction between them (Gardner et al., 2011). Both trait/behavior view and

process view are acceptable. Considering the scenario of our research, we follow Walumbwa et al. (2008) to get a better understanding of traits and behaviors of authentic leaders.

Table 2.2 Definitions for authentic leadership

| Author (s) | View | Definition |
|--------------------------------------|--------------------|--|
| B. J. Avolio, Luthans, et al. (2004) | trait/behavior | Authentic leaders are “those individuals who know who they are, what they think and behave and are perceived by others as being aware of their own and others' values/moral perspective, knowledge, and strengths; aware of the context in which they operate; and who are confident, hopeful, resilient, and of high moral character.” |
| George and Sims (2007) | trait/behavior | Authentic leaders are “genuine people who are true to themselves and to what they believe in. They engender trust and develop genuine connections with others. Because people trust them, they are able to motivate others to high levels of performance. Rather than letting the expectations of other people guide them, they are prepared to be their own person and go their own way. As they develop as authentic leaders, they are more concerned about serving others than they are about their own success or recognition.” |
| Walumbwa et al. (2008) | trait/behavior | We define authentic leadership as “a pattern of leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development.” |
| Luthans and Avolio (2003) | leadership process | We define authentic leadership in organizations “as a process that draws from both positive psychological capacities and a highly developed organizational context, which results in both greater self-awareness and self-regulated positive behaviors on the part of leaders and associates, fostering positive self-development. The authentic leader is confident, hopeful, optimistic, resilient, transparent, moral/ethical future-oriented, and gives priority to developing associates into leaders themselves. The authentic leader does not try to coerce or even rationally persuade associates, but rather the leader's authentic values, beliefs, and behaviors serve to model the development of associates.” |
| Shamir and Eilam (2005) | leadership process | Our definition of authentic leaders implies that “authentic leaders can be distinguished from less authentic or inauthentic leaders by four self-related characteristics: 1) the degree of person role merger i.e. the salience of the leadership role in their self-concept, 2) the level of self-concept clarity and the extent to which this clarity centers around strongly held values and convictions, 3) the extent to which their goals are self-concordant, and 4) the degree to which their behavior is consistent with their self-concept.” |

2.2.2 Measurement

In the early stage, the measurement of authentic leadership either had strong situational dependence, or directly used scales of other concepts. For example, Henderson and Hoy (1983) developed the authentic leadership scale in the educational context, so its items depended on the specific educational context heavily. Besides, S. M. Jensen and Luthans (2006) divided authentic leadership into three dimensions: leadership behaviors, future orientation, and ethical climate of the organization. Accordingly, they measured authentic leadership with three scales. These methods were limited by the research stage, and therefore may not be scientifically enough.

With the development of the research on authentic leadership, many researchers began to develop scales of authentic leadership. For example, Tate (2008) divided authentic leadership into three dimensions: self-discipline and ethical standards, establishing positive relationships, and passion for purpose, and developed a scale with 17 items. In addition, Walumbwa et al. (2008) developed Authentic Leadership Questionnaire (ALQ) with 16 items and four dimensions: leader self-awareness, relational transparency, internalized moral perspective, and balanced processing. After this scale was proposed, it was widely recognized and used by researchers (Peus et al., 2012). After that, therefore, scholars' attempts on the authentic leadership measurement mainly focused on the improvement of ALQ. For example, Neider and Schriesheim (2011) tested and developed ALQ, forming Authentic Leadership Inventory (ALI) with four dimensions and 14 items.

To sum up, this thesis chose the scale by Neider and Schriesheim (2011) to assess authentic leadership. The scale divides items into four items: self-awareness, relational transparency, internalized moral perspective, and balanced processing. Among these items, self-awareness includes 3 items, sample items are “My leader describes accurately the way that others view his/her abilities” and “My leader shows that he/she understands his/her strengths and weaknesses”. Relational transparency includes 3 items, sample items are “My leader openly shares information with others” and “My leader expresses his/her ideas and thoughts clearly to others”. Internalized moral perspective includes 4 items, sample items are “My leader shows consistency between his/her beliefs and actions” and “My leader resists pressures on him/her to do things contrary to his/her beliefs”. Balanced processing includes 4 items, sample items are “My leader carefully listens to alternative perspectives before reaching a conclusion” and “My leader objectively analyzes relevant data before making a decision”.

2.2.3 Antecedents

Previous studies have shown that the antecedents of authentic leadership mainly include two aspects: individual factors and organizational situations.

In terms of individual factors, authentic leadership is influenced by personal traits (L. Baron, 2012; Randolph-Seng & Gardner, 2013), ability (Weischer et al., 2013), self-knowledge (Peus et al., 2012), and self-consistency (Peus et al., 2012). For example, Randolph-Seng and Gardner (2013) found that individuals with optimal self-esteem have higher authentic leadership. S. M. Jensen and Luthans (2006) found that one of the dimensions of psychological capital such as optimism, resiliency and hope, and the whole psychological capital are positively related to authentic leadership. In the face of failures, optimistic people will take them as specific situations of temporary defeats, and easier to embrace. Therefore, optimistic leaders are future-oriented and enthusiastic. Additionally, resiliency can help people quickly recover from adversity. Leaders' resiliency can make them more efficient in uncertain situations, but also more open to development. In the meantime, hope can motivate leaders to work hard to achieve their goals. All of these are closely connected to the qualities of authentic leaders. Michie and Gooty (2005) suggested that some universal values (e.g., fairness, honesty, loyalty, generosity, kindness) and others-orientated emotions (e.g., gratitude, friendship, appreciation and caring for others) have important and key functions on the development of authentic leadership. For ability, Besides, Weischer et al. (2013) confirmed that a strong enactment and telling of the life story help followers perceive the leader's authenticity. In terms of self-knowledge and self-consistency, Peus et al. (2012) argued that both self-knowledge and self-consistency are predictors of authentic leadership.

In addition, Gardner et al. (2005) argued that some of the key events (e.g., family, childhood, culture, education, occupation, and role model) in the history of personal development can shape individuals' self-cognition. Meanwhile, one or more people who are upright, sincere, trustworthy around the leaders play important roles in the personal growth of leaders. Similarly, some triggering events in the life also can promote the development of leadership and leaders' self-consciousness. Shamir and Eilam (2005) found that reflection of life events is one of the important factors that affect authentic leadership through the way of asking leaders to tell their life stories. Because of reflection, people can understand their own strengths, weaknesses, motivations and values, natures that touch the essence of self, and have a clear self-concept. Tate (2008) found that self-monitoring is negatively related to authentic leadership. Specifically, low self-monitoring means that leaders' beliefs are consistent with their values.

In term of situational factors, training program (L. Baron, 2012) and flexibility-oriented cultures (Azanza et al., 2013) can help build authentic leadership. For example, through a three-year training program, L. Baron (2012) found that participation in a training program would help leaders develop authentic leadership. Besides, Azanza et al. (2013) argued that flexibility-oriented cultures are positively related to authentic leadership. Gardner et al. (2005) argued that leaders interaction occurs in the context of dynamic change of organization, hence authentic leadership is influenced by organizational climates. Additionally, the organizational environment that are characterized as inclusion, ethics, and attaching great importance to advantages can promotes the development of authentic leadership. It is such organizational environment that provide open information, resources, supports, and fair opportunities to leaders and followers to learn and grow. C. D. Cooper et al. (2005) indicated that ethical climate can lead people to do what are just and fair. Meanwhile, supportive organizational climate can provide more open access to information and resources, and offer leaders more opportunities, all of which can enhance authentic leadership.

2.2.4 Consequences

The consequences of authentic leadership also include two aspects: individual results and team results.

At the individual level, past research discussed the consequences of authentic leadership from four aspects: individual's cognition, psychology and work attitude, work behavior, and work performance. In terms of individual's cognition, authentic leaders tend to be optimistic, positive, integrate, and can build high quality relationships with their followers, thus have important impacts on employees' cognition. For example, B. J. Avolio, Luthans, et al. (2004) found that authentic leadership can earn the trust of followers. Ilies et al. (2005) found that authentic leadership can improve employees' identification with leaders. Gardner et al. (2005) found that authentic leadership can motivate their followers to regard their leaders as positive leadership model. In addition, Peus et al. (2012) found that authentic leadership can improve the predictability, while Spitzmuller and Ilies (2010) confirmed that authentic leadership can increase employee perceptions of individualized consideration, inspirational motivation, and idealized influence.

In terms of psychology and work attitude, Hsiung (2012) found that authentic leadership can create positive emotions for followers. S. M. Jensen and Luthans (2006) confirmed that authentic leadership can improve work happiness. Woolley et al. (2010) argued that authentic

leadership are positively related to psychological capital. In the meantime, Weischer et al. (2013) suggested that authentic leadership can effectively improve followers' trust. Hannah et al. (2011) confirmed that authentic leadership can enhance moral courage. Peus et al. (2012) and Walumbwa et al. (2008) indicated that authentic leadership can improve followers' satisfaction with their supervisor. Azanza et al. (2013) and S. M. Jensen and Luthans (2006) found that authentic leadership can improve employees' job satisfaction. Similarly, many scholars also found that authentic leadership have positive effects on organizational affective commitment (S. M. Jensen & Luthans, 2006; Peus et al., 2012; Walumbwa et al., 2008), and well-being (L. Baron, 2012).

In terms of work behavior, Hsiung (2012) found that authentic leadership can promote employee voice behavior. Walumbwa et al. (2008) confirmed that authentic leadership can enhance employees' organizational citizenship behavior. Similarly, Hannah et al. (2011) found that authentic leadership can not only improve employees' ethical behavior, but also improve their prosocial behavior. At the same time, Hsiung (2012) indicated that authentic leadership can improve the leader-member exchange relationship. Peus et al. (2012) found that authentic leadership can increase employees' extra-effort. S. J. Peterson et al. (2012) found that authentic leadership can improve employees' job performance via improving their motivations. H. Wang et al. (2014) found that authentic leadership are positively related to employee performance, and LMX and psychological capital have significant mediating effect between authentic leadership and employee performance. Meanwhile, psychological capital moderates the relationship between them.

At the team level, previous studies mainly focused on team climate, team behavior, and team performance. Specifically, Hmieleski et al. (2012) and Woolley et al. (2010) found that authentic leadership can create positive affective tone and positive work climate. Hsiung (2012) confirmed that authentic leadership are positively related to procedural justice climate., Clapp-Smith et al. (2008) and Wong and Cummings (2009) found that authentic leadership can motivate trust in management. Also, some scholars found that authentic leadership can improve team virtuousness (Rego et al., 2013) and team affective commitment (Rego et al., 2013). In terms of team behavior, authentic leadership can effectively promote team voice behavior (Wong & Cummings, 2009). In terms of team performance, Rego et al. (2013) found that authentic leadership can improve team potency. Clapp-Smith et al. (2008) confirmed that authentic leadership can promote sales growth. At the organizational level, Hmieleski et al. (2012) found that authentic leadership can improve firm performance.

2.2.5 Research comment

Taken together, although there have been many empirical studies on the results of authentic leadership's antecedents, outcomes and mechanisms, the research on the impacts of authentic leadership on performance from the viewpoint of multilevel still lack. What's more, the extant researches on the relationship between authentic leadership and performance do not consider the characteristics of new generation employees and new generation employee-leader relationship.

2.3 Research on psychological capital

2.3.1 Definition

Psychological capital is put forward based on the existing theory and research of human capital and social capital. As a result, it first appeared in the literature of economics, investment, and sociology. However, what motivate people to begin the research of psychological capital are from positive psychological movement. In 2002, Seligman, a famous scholar in America, formally proposed the concept and construct of psychological capital based on human capital theory, positive psychology theory, and positive organizational behavior theory. He suggested that psychological factors that lead to positive behaviors should be considered into the category of capital.

However, the extant research on the understanding and knowledge of psychological capital is still developing. So far, there are three mainstreams of research on the concept of psychological capital.

The first one is trait theory. In the point view of the theory, psychological capital is regarded as an intrinsic quality existed in individual. In addition, psychological capital is consistent roughly with personalities because of the characteristics of persistence and relative stability. For example, Goldsmith et al. (1998) suggested that psychological capital is general attitudes and personal traits that are able to reflect the self-views and self-esteem of individuals, and influence individuals' motivation and work. In addition, Hosen et al. (2003) argued that psychological capital refers to a psychological inner basic structure with durability and relative stability, individuals can get it by the way of investment such as learning. This psychological inner basic structure includes personality traits and tendencies, cognitive ability, self-monitoring and effective emotional communication quality. Cole (2006) argued that psychological capital is a personality trait that affect individuals' behaviors and output.

The second one is state theory. This theory indicates that psychological capital is individuals' specific positive state of psychology. This specific psychological resource can lead to individuals' positive behaviors, and thus contribute to high performance, and people can measure, invest, develop, and effectively manage it. Similarly, Tettegah (2002) suggested that psychological capital is a combination of individuals' self-work, ethics, beliefs, attitudes and cognition. B. J. Avolio, Luthans, et al. (2004) considered psychological capital as a positive state that can lead to positive organizational behaviors and contribute to predicting individuals' performance and job satisfaction. Based on positive psychology and positive organizational behaviors, Luthans et al. (2005) studied the differences and characteristics of economic capital, social capital and human capital, and then put forward a framework, defined psychological capital as a psychological state that lead to individuals' positive organizational behaviors. Later, Luthans et al. (2005) clearly defined psychological capital as "a core psychological factor of positivity in general, and positive organizational behavior criteria meeting states in particular, that go beyond human and social capital to gain a competitive advantage through investment or development of 'who you are'". Aftermath, Luthans, Avolio, et al. (2007) revised the definition of psychological capital and considered it as individuals' positive psychological state in the process of development and growth.

The third one is synthetic theory. According to the theory, psychological capital is a psychological quality that possess the characteristics of both trait and state. For example, B. J. Avolio and Luthans (2006) used "state-like" to explain psychological capital in the research of the concept of psychological capital. They indicated psychological capital has the characteristics of both state and trait. Actually, state and trait are extremes of the same continuum. The state means that psychological capital can be developed and utilized through the way of intervention. In the meantime, the trait makes it relatively stable. A lot of studies support the opinion of the synthetic theory, such as Snyder (2000)'s research on hope, Masten and Reed (2015)'s research on resilience, Bandura and Locke (2003)'s research on self-efficacy, and Carver and Scheier (2002)'s research on optimism. Therefore, more and more scholars explored psychological capital based on the synthetic theory.

For the dimensions of psychological capital, extant studies can be divided into several categories.

The first one is two-dimensional theory. Goldsmith et al. (1997) suggested psychological capital consists of self-esteem and locus of control. Specifically, self-esteem includes some factors such as values, kindness, appearance and social ability. Locus of control includes internal and external locus of control.

The second one is three-dimensional theory. Initially, Luthans et al. (2005) suggested that psychological capital should include hope, optimism and resilience. S. Jensen (2003) also supported the three-dimensional construct proposed by Luthans et al. (2005).

The third one is four-dimensional theory. T. A. Judge and Bono (2001) argued that psychological capital should include self-esteem, self-efficacy, locus of control and emotional stability. Luthans, Avolio, et al. (2007) suggested that psychological capital consists of self-efficacy, hope, resilience and optimism, all of which can promote individuals' performance effectively, such as productivity, satisfaction and low turnover intention.

The fourth one is five-dimensional theory. Page and Donohue (2004) divided psychological capital into five components, which include self-efficacy, optimism, hope, resilience and trust. Letcher and Niehoff (2004) examined the dimensions of psychological capital by empirical study, and proposed that psychological capital should include emotional stability, extraversion, openness, conscientiousness and agreeableness.

Currently, the mainstream studies have reached consensus that psychological capital is a multidimensional construct that refers to "an individual's positive psychological state of development". It is concerned with individuals' psychological strength, perceptions, attitudes toward work, and general outlook on life and characterized by the following: 1) self-efficacy; i.e., having confidence to take on and put in the necessary effort to succeed at challenging tasks; 2) optimism; i.e., making a positive attribution about succeeding now and in the future; 3) hope; i.e., persevering toward the goals, and when necessary, redirecting paths to goals in order to succeed; and 4) resilience; i.e., when beset by problems and adversity, sustaining and bouncing back and even beyond to attain success. Psychological capital is also an individual's positive appraisal of circumstances and probability for success under those circumstances based on motivated effort and perseverance (Luthans, Avolio, et al., 2007). Later, scholars provided the definition of psychological capital at the team level and defined it as "the team's shared positive appraisal of their probability for success and circumstances based on their combined motivated effort and perseverance" (S. J. Peterson & Zhang, 2011). The distinction of psychological capital at different level is that individual level psychological capital is a psychological resource developed and held by individuals during their work and life, whereas team level psychological capital is the shared and agreed perception and product of the interactive and coordinative dynamics of its members during their work (Dawkins et al., 2015; Tho & Duc, 2020).

2.3.2 Measurement

Scholars have developed different measurements to assess psychological capital. For two-dimensional theory, Goldsmith et al. (1997) developed 33-item scale, which include self-esteem and locus of control. For three-dimensional theory, Luthans et al. (2005) developed 30-item scale, which include three aspects: hope, resilience and optimism. For four-dimensional theory, many researches assessed individual psychological capital mainly using 24-item Psychological Capital Questionnaire developed by Luthans, Youssef, et al. (2007). The items are divided into four aspects: self-efficacy, optimism, hope and resilience that consistent with the definition. The scale is widely used by the research on individual psychological capital currently. In addition, S. Jensen (2003) developed a four-dimensional scale that include optimism, hope, confidence and resilience to assess psychological capital. For five-dimensional theory, Letcher and Niehoff (2004) developed five-dimensional scale that includes emotional stability, extraversion, openness, conscientiousness and agreeableness to evaluate. At the team level, the measurement of team psychological capital has two different approaches: One is a direct-consensus way to aggregate individual level psychological capital to the team level (C. C. Chen et al., 2021; S. J. Peterson & Zhang, 2011), the other is referent-shift approach proposed by Chan (1998) (Vanno et al., 2014). Additionally, Walumbwa et al. (2011) developed an 8-item scale to measure team level psychological capital. Generally, the first approach is used commonly.

In this study, the scale developed by Lorenz et al. (2016) was used to evaluate psychological capital at the team level and individual level, with 12 items respectively, including four dimensions of self-efficacy, optimism, hope, and resilience. At the team level, self-efficacy includes three items, such as "as a team, we are confident that we can effectively deal with unexpected events" and "as a team, we can keep calm in the face of difficulties because we believe in our ability to deal with problems". Resilience includes three items, such as "sometimes we 'force' ourselves to do something, whether we want to or not" and "when we are in a difficult situation, we usually manage to find a solution". Optimism consists of three items, such as "as a team, we look forward to the future life" and "my team will have many good things in the future". Hope includes three items, such as "if my team finds itself in a difficult situation, we can think of many ways to get out of it" and "we can think of many ways to achieve our team goals". At the individual level, self-efficacy includes three items, such as "I can solve most problems if I put in the necessary effort" and "I can stay calm in the face of difficulties because I can rely on my coping abilities." Resilience includes three items, such as "sometimes I force myself to do what I want" and "when I am in a difficult situation, I can

usually find a way out." Optimism consists of three questions, including "I am looking forward to the future life" and "there are many wonderful things waiting for me in the future". Hope consists of three questions, including "if I find myself in a difficult situation, I can think of many ways to get out of it" and "I can think of many ways to reach my current goal".

2.3.3 Antecedents

Previous studies suggest that the antecedents of psychological capital includes internal factors and external factors.

2.3.3.1 Internal factors

Internal factors that influence psychological capital includes three aspects: personal traits, motivation, and ability. For personal trait, Song et al. (2021) found that employees with authenticity in workplace can gain more social supports and resources, and have the strong sense of control, hence they have higher psychological capital. In terms of motivation, Vogt et al. (2016) showed that job crafting can boost the personal resources to improve employees' psychological capital, Teng et al. (2020) explored the effect of approach crafting on psychological capital, and found that the way of challenge seeking can foster employees' ability of overcoming adverse situations, and resources seeking can help employees get more advice and feedback so that employees can monitor their behaviors and performance better. Both of these ways of approach crafting can enhance employees' psychological capital. For ability, Kotze (2018) found that employees with the ability of self-leading can effectively improve employees' confidence, and achieve their goals by variable ways, thus improve their psychological capital. Harunavamwe et al. (2020) also examine the effect of self-leadership on psychological capital, and confirmed that employee with the ability of self-leading can be better to monitor their resources and behaviors, then improve their psychological capital. In addition, D. Kim et al. (2021) indicated that the more employees experience a developmental job, the more psychological capital they have.

2.3.3.2 External factors

External factors can be grouped into two categories: leadership style and organizational environment. For leadership style, many scholars have investigated the effects of positive leadership style on psychological capital. For example, many studies have shown that empowering leadership can raise employees' intrinsic motivation, thus have positive effects on employees' psychological capital (M. Kim & Beehr, 2021; Park et al., 2017). In addition,

authentic leader can improve employees' psychological capital by encouraging to improve transparency, attaching great importance to employees' development and giving followers a sense of inclusion (Amunkete & Rothmann, 2015; D. W. Wang et al., 2021). In the meantime, many researchers found authentic leadership is positively related to team psychological capital. Similarly, S. W. Chen and Peng (2021) suggested that servant leadership can improve employees' work-related knowledge, skills, and capabilities to actuate their potential, and help them realize their career goals, then increase employees' psychological capital. Bouckenooghe et al. (2015) found that ethical leadership can clarify how followers' actions and tasks, helping them to achieve the organization's goals. Additionally, ethical leaders can encourage their followers to assess the ethical consequences of their actions, thus improve followers' psychological capital. Qian et al. (2020) found that leader humility can provide employees with positive feedback on performance. Additionally, leaders with humility can encourage employees to adopt new ways of accomplishing the work, and create a sense of validation of strengths, all of which contribute to the increasing of employees' psychological capital. Z. W. Li et al. (2019) argued that humorous leadership has positive effects on employees' psychological capital. They indicated that humorous leader can earn trust and confidence from their subordinates by funny words and deeds. On the other hand, humorous leaders can provide their followers with cognitive, emotional, and ethical assistance. What's more, humorous leaders are able to help follower to develop their own abilities and promote their self-confidence. Karakitapoglu-Aygun et al. (2020) found that benevolent leadership are more likely to induce followers' positive feelings, which will help followers experience high levels of trust, emotional bonding, warm feelings, comfort, and thus strengthen their psychological capital. Jiao and Lee (2021) found that spiritual leadership can articulate clear and fully challenging goals, thus promote their psychological capital. In addition, Y. Z. Li (2019) and Y. Z. Li et al. (2018) also confirmed that transformational leadership and transactional leadership can increase employees' psychological capital. Besides, leader' psychological capital, work engagement, and LMX also have more positive effects on employees' psychological capital (J. S. P. Story et al., 2013; Y. J. Zhao & Xie, 2020). For negative leadership style, some studies indicated that abusive supervision will lead to employees' great stress and the loss of psychological resources, which harm employees' psychological capital (U. A. Agarwal, 2019; Ahmad et al., 2019; W. L. Wu & Lee, 2016). Besides, authoritarian leadership similarly has negative effects on employees' psychological capital (Karakitapoglu-Aygun et al., 2020).

In terms of organizational environment, previous studies found that human resource management systems play important roles on psychological capital. For example, S. L. Chen

(2018) indicated that high-commitment work system provides a resourceful environment, such as positive feedback, support and training from organization, which inspires employees' internal and external motivation, thus improve their psychological capital. C. C. Chen et al. (2021) argued that high-commitment work system can not only provide resourceful environment, but also develop team members' affective commitment, hence improve team psychological capital. P. Agarwal and Farndale (2017) found that high-performance work systems can improve employees' job autonomy, nurture and develop their psychological resources, and satisfy their psychological needs, then strengthen their psychological capital. Miao et al. (2021) took employees in technology manufacturing companies as research objects, and further confirmed that high-performance work systems are positively related to employees' psychological capital. Additionally, Wojtczuk-Turek and Turek (2015) investigated the impacts of HR flexibility on psychological capital, and suggested that HR flexibility has positive effects on employees' psychological capital. Besides human resource management systems, Bhatnagar and Aggarwal (2020) found that perceived organizational support toward the environment can help employees understand more about the meaning of their work, then have positive effects on their psychological capital. W. M. Hur et al. (2016) confirmed that organizational distributive justice and procedural justice can make employees realize that organization value them so that strengthen their belongingness, thus increase employees' psychological capital. Gao et al. (2021) found that family support (includes financial support, social support, and emotional support) can improve employees' psychological capital.

2.3.4 Outcomes

Psychological capital outcomes include two aspects: individual outcomes and team outcomes.

2.3.4.1 Individual level outcomes

Previous studies have explored the outcomes of psychological capital include job performance, work behaviors, and work attitude. For job performance, Choi et al. (2020) found that psychological capital can improve employees' job performance by informal learning. When the level of person-organization fit and person-work are low, the positive indirect effects of psychological capital on job performance will be enhanced. Z. Gong et al. (2019) also confirmed the positive effect of psychological capital on job performance. Based on 417 employees in Chinese hotel industries, S. S. Huang et al. (2021) confirmed that psychological capital is positively related to job performance. Some scholars further examine the effect of psychological capital on types of job performance. For example, Bouckennooghe et al. (2015)

found that psychological capital has positive effects on in-role performance; Wirawan et al. (2020) confirmed that have indirect effects on not only in-role performance, but also extra-performance via improving work engagement; Slatten et al. (2021) found that psychological capital can strengthen organizational vision integration, then improve employees' creative performance; S. L. Chen (2015) has explored the effect of leader's psychological capital on employees' performance, and found that leader's psychological capital can enhance employees' psychological capital and work engagement, then improve both task performance and contextual performance.

In terms of other work behaviors, Cenciotti et al. (2017) found that psychological capital can motivate job crafting, then improve their subjective career success and objective career success; M. Kim and Beehr (2021) argued that psychological capital can strengthen employees' job crafting, thus decrease employees' psychological and physical withdrawal; Hsu and Chen (2017) found that psychological capital can improve employees' innovation behavior; Similarly, Gupta and Singh (2014) took Indian R&D laboratories as research objectives, and found that psychological capital is positively related to employee creativity. Z. W. Li et al. (2019) also suggested that psychological capital has positive effects on employee creativity, and job autonomy strengthen the positive effect of psychological capital on employee creativity. Teng et al. (2020) indicated that psychological capital can enhance employees' helping behaviors, and Y. Hu et al. (2018) found that psychological capital can improve individual's proactive behaviors, Qian et al. (2020) and Ahmad et al. (2019) revealed that psychological capital can strengthen employees' organizational citizenship behavior and weaken their withdrawal behaviors, W. L. Wu and Lee (2017) investigated the positive role of psychological capital on knowledge sharing.

For work attitude, some studies found that psychological capital can improve employees' job satisfaction and organizational commitment. For example, Tang et al. (2019) found that psychological capital can motivate employees' job satisfaction and organizational commitment. Meanwhile, job satisfaction also mediates the relationship between psychological capital and organizational commitment. Wen and Liu-Lastres (2021) found that psychological capital can improve work engagement and happiness at workplace, further strengthen job satisfaction and organizational commitment; Similarly, Yan et al. (2021) also confirmed that psychological capital is positively related to job satisfaction and organizational commitment. Some scholars have investigated the research on the relationship between psychological capital and well-being. For example, J. B. Avey et al. (2010) found that psychological capital can improve employees' well-being. R. A. Baron et al. (2016) research the effect of entrepreneurs' psychological capital

on well-being, and confirmed that psychological capital can decrease perceived stress, and strengthen their subjective well-being. In addition, some studies have indicated that psychological capital have positive effects on work engagement. For example, Joo et al. (2016) found that psychological capital can promote job empowerment, then enhance employees' work engagement. Lupsa et al. (2019) took Romanian social workers as research objectives, and confirmed that psychological capital can not only improve their work engagement, but also strengthen their health. Majumdar and Kumar (2021), Tisu et al. (2020), and Wirawan et al. (2020) also demonstrate the positive effect of psychological capital on job engagement. U. A. Agarwal (2019) and Teng et al. (2020) also found that psychological capital is positively related to work engagement. For turnover intention, Yan et al. (2021) argued that psychological capital can decrease employees' turnover intention directly, meanwhile, psychological capital can indirectly affect turnover intention by job satisfaction and organizational commitment. For other studies, Jiao and Lee (2021) found that psychological capital can improve work-to-family facilitation, D. W. Wang et al. (2021) confirmed that psychological capital can reduce employee's job insecurity.

2.3.4.2 Team level outcomes

At the team level, Rego et al. (2019), C. C. Chen et al. (2021) indicated that team level psychological capital has positive effects on team and firm performance, Walumbwa et al. (2011) found that team psychological capital is positively related to team organizational citizenship behaviors, Tho and Duc (2020) confirmed that team psychological capital can improve team innovation via team exploratory learning and team exploitative learning. However, previous studies focus on individual level and lack relevant studies at team level.

2.3.5 Psychological capital as a moderator outcomes

Previous studies have discussed the moderating role of psychological capital on two aspects: relationships between leadership style and employees' psychology and behavior, relationships between organizational environment and employees' psychology and behavior.

For research on relationships between leadership style and employees' psychology and behavior, Megeirhi et al. (2018) found that team with high level of psychological capital will strengthen the negative effects of authentic leadership on employee cynicism, tolerance workplace incivility and job search behaviors, L. Guo et al. (2018) confirmed that employees' psychological capital can reduce the negative effect of authentic leadership on employee creativity via fear. Additionally, W. Liu et al. (2016) found that employees who have high level

of psychological capital can cope with stress greatly result from abusive supervision to lessen the effect of abusive supervision on psychological distress, while H. Wang et al. (2014) and Kalyar et al. (2020) found that the higher psychological capital is, the stronger the positive relationship between LMX and job performance.

In terms of studies about relationships between organizational environment and employees' psychology and behavior, previous studies have revealed that psychological capital can weaken effects of negative factors. For example, Sarwar and Muhammad (2021) found that psychological capital can reduce the positive impacts of interactional injustice and organizational dehumanization on perceived incivility, Cheung et al. (2019) confirmed that psychological capital can reduce employees' anxiety result from job insecurity, Yildiz (2019) found that psychological capital will enhance the positive role of organizational trust on organizational citizenship behavior, Z. Liu et al. (2020) confirmed that psychological capital moderates the indirect effect of climate for innovation on employee creativity via openness to change.

2.3.6 Research comment

There are abundant studies about psychological capital, including antecedents and outcomes, which mainly serves as a mediator to explain the mechanism in some theoretical models. However, there exists limitation in several aspects as following:

(1) Previous studies have investigated the influence of external factors (e.g., leadership style and organizational environment) on employees' psychological capital, but the research on the roles of internal factors is scarce and lack a complete theoretical system.

(2) Although some scholars have proposed the research about team level psychological capital, most studies still focused on individual level, and lack studies about psychological capital at the team level.

(3) Previous studies explained the role of psychological capital mainly from resource-based perspective (e.g., conservation of resources theory and job demands-resources model), few. However, few studies tried to explain psychological capital from other perspective.

2.4 Research on team cohesion

2.4.1 Definition

In the field of social science research, cohesion usually refers to central forces and mutual

attractions among all member in the internal organization. On the other hand, cohesion in an organization means that team itself and the other team members have attractions to others, making team members are willing to stay in the team. In 1939, Lewin, an American psychologist, studied team cohesion from the viewpoint of psychology, and put forward the concept of "team dynamics" for the first time, considering that the research on cohesion should focus on team member themselves and perceived relationship between team members and their teams because this perception of team members determines whether they are willing to stay in the team.

Later, scholars proposed that team cohesion was a unidimensional construct (Mullen & Copper, 1994), reflecting the notion that cohesion is "the total field of forces which act on members to remain in the group" (Festinger et al., 1950). Afterwards Festinger (1950) proposed that the forces depend on the attraction to the members of a group, the activities of a group, and the prestige of the group, thus team cohesion is supposed to be a multidimensional construct. With the in-depth study of team cohesion, more and more scholars have recognized the multidimensional feature of team cohesion (Zaccaro, 1991). However, the definition of team cohesion varies from different scholars. For instance, LePine et al. (2008) argued team cohesion is "team members' attraction and commitment to their team, team members, and the team's task", Carron (1982) regarded it as "a dynamic process that is reflected in the tendency for a group to stick together and remain united in the pursuit of its goals and objectives", Carron and Spink (1995) defined that team cohesion is "a cognition about the group that exists in the minds of individual group members". Tekleab et al. (2009) argued it refers to "the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives".

For dimensions of team cohesion, some scholars suggested that team cohesion is a two-dimensional construct. For example, some scholars such as Hagstrom and Selvin (1965) and J. A. Peterson and Martens (1972) proposed that team cohesion includes two aspects: task cohesion and social cohesion. For task cohesion, it mainly presents the fit between individual goals and team work and motivation for members. While reaching their team goals or completing their tasks, they can satisfy their own needs and enables to realize their goals. In this process, team goals and tasks have strong attraction to team members. Compared to task cohesion, the concept of social cohesion is relatively broad. Social cohesion refers to a cohesion that from team members' identification with society. Many scholars also agree with the definition of the two-dimensional construct of team cohesion (A. Chang & Bordia, 2001; Dion & Practice, 2000). Zaccaro and Lowe (1988) suggested team cohesion should include task cohesion and interpersonal cohesion. In their opinion, they argued that team cohesion is mainly

from two aspects: the first one is team's attraction to team members, the another is interpersonal attraction among team members. Therefore, dividing team cohesion into task cohesion and interpersonal cohesion are better. Besides the two dimensions, Carless and De Paola (2000) suggested that team cohesion should also include individual attraction to the group. Additionally, Beal et al. (2004) classified it into three aspects, which include interpersonal attraction, task commitment and group pride. What's more, Carron et al. (1985) argued that social cohesion and task cohesion should be further divided based on individual level and team level and finally proposed a four-dimensional construct of team cohesion, which includes group integration-task, group integration-social, individual attractions to group-task, and individual attractions to group-social.

Although previous studies indicate different views of team cohesion's concept and dimensions, they generally tend to be unified. Considering the scenario of our research, we considered team cohesion as a two-dimensional construct that includes social cohesion and task cohesion to reflect the nature and characteristics of team cohesion.

2.4.2 Measurement

Previous studies use different scales to measure team cohesion. For example, Carless and De Paola (2000) developed 9-items scale, including task cohesion, social cohesion and individual attraction to the group, to investigate sport teams, A. Chang and Bordia (2001) developed a 7-items scale based on the characteristics of students and the dimensions includes task cohesion and social cohesion, Mathieu John (1991) took the team as a unit and developed a 6-items scale that only have single dimension. Similarly, Podsakoff et al. (2007) developed a 6-items scale based on the definition that team cohesion is a unidimensional construct. Additionally, many scholars recognized that team cohesion should include social cohesion and task cohesion, and developed relevant scales (S. Kozlowski & Chao, 2012; C. L. Lee & Farh, 2007).

We chose the scale by Mathieu et al. (2015) with 6 items and two dimensions (i.e. social cohesion and task cohesion) to assess team cohesion. Among these items, social cohesion includes 3 items, sample items are "There is a feeling of unity and cohesion in my team" and "There is a strong feeling of belongingness among my team members". Task cohesion includes 3 items, sample items are "Members of my team share a focus on our work" and "My team members pull together to accomplish work".

2.4.3 Antecedents

Previous studies have indicated that antecedents of team cohesion include leadership styles, relationship between individual and team members, and team characteristics.

For leadership styles, previous studies focus on the research of positive leadership. For example, M. H. Chen and Somya (2018) found that entrepreneurial leadership can help team members to adapt to contingencies, and improve the development of group interaction, thus enhance team cohesion. B. J. Kim and Kim (2014) also confirmed that transformational leadership is positively related to team cohesion. Chiniara and Bentein (2017) suggested that servant leadership can provide all team members with supports, thus decrease the perceived differentiation of LMX. The team members with less the perceived differentiation of LMX are less likely to generate a relational categorization that impedes development and maintenance of the field of forces uniting a team. Therefore, team cohesion can be improved. Similarly, Zheng et al. (2015) found that ethical leadership can satisfy followers' needs for ethical guidance, enhance efficacy in understanding priorities for decision-making, create an ethical climate that improve the perception of shared beliefs and norms, and thus has positive effects on team cohesion.

In terms of relationship between individual and team members, previous studies indicated that individuals with motivation to achieve team goals will improve team cohesion (J. V. Chen et al., 2017), but individuals who keep a negative affect or cannot form a good relationship with other team members will harm team cohesion (Hill et al., 2019). Additionally, Ronen and Mikulincer (2009) argued that an individual who are depended on other members deeply will lead to attachment anxiety, which has negative effects on team cohesion. On the other hand, team members who have good relationship and cooperate by knowledge sharing and shared leadership (Cui, 2017; Mathieu et al., 2015), adopt interpersonal-oriented citizenship behaviors (Peng et al., 2019), improve coordination effectiveness (Paul et al., 2016), decrease task conflicts and relationship conflicts (Tekleab et al., 2009) will increase team cohesion.

For team characteristics, diversity of team members is an important factor that influence team cohesion. Previous studies have found that team diversity has negative effects on team cohesion, which includes surface level diversity and deep level diversity (Kaufmann & Wagner, 2017; Knapp et al., 2015; Liang et al., 2015; Woehr et al., 2013). In addition, team that has a characteristic of goal orientation, set a good team goal, and has the ability to help members to accept team goal will improve team cohesion (Acton et al., 2019; Brahm & Kunze, 2012; Goffnett, 2020).

2.4.4 Outcomes

Previous studies indicated that team cohesion plays an important role on team performance. For instance, Tekleab et al. (2016) found that team cohesion can cultivate an environment that is conducive for team learning. The environment can increase their motivation, trust, and cognitive familiarity for productive inquiry to promote team learning, thus increase team performance. M. H. Chen and Somya (2018) found that team cohesion can improve team members' efficacy, strengthen the bond and unity among team members, thus improve team performance. Similarly, many other scholars confirmed the direct effects of team cohesion on team performance. For example, Hill et al. (2019) found that team cohesion can motivate team members work together productively to keep the team on track, meet deadlines and goals set by the team, then improve team performance. Kaufmann and Wagner (2017) indicated that team cohesion can motivate team performance. R. Zhang et al. (2021) suggested that team cohesion can decrease the inconsistency and contradiction among team members, lessen interpersonal tension, and promote team's progress and social relationships, and thus improve team performance. J. V. Chen et al. (2017) also confirmed that team cohesion has positive effect on team performance.

Additionally, other scholars have also explored the effects of team cohesion on other positive attitudes and behaviors. For instance, Goffnett (2020) found that team cohesion can nurture collaborative behaviors and goal acceptance, strengthen the team affiliation for team members, hence improve team members' job satisfaction. Jansen et al. (2016) confirmed that team cohesion can enhance the exchange and sharing of information, provides reliable platforms for voicing dissenting opinions and more tolerant towards disagreement and dissent, and to embrace cooperative conflict management interventions to resolve dissimilar values and learning perspectives, and thus has the positive effect on team ambidexterity. Liang et al. (2015) also suggested that team cohesion can improve the commitments among team members and motivate them to be pursuit of achieving team goals, thus increase their team helping behaviors. On the other hand, some studies also confirmed that team cohesion can weak some negative behaviors and performance. For example, K. J. Johnson et al. (2018) indicated that team cohesion can decrease the possibilities of deviant behaviors and motivate team members to be more likely to perceive the threats to team's interests, thus decrease the use of privileged information. Zheng et al. (2015) found that team cohesion can improve team members' attachment to team and thus strengthen their perception of organizational support, which decrease their emotional exhaustion. Additionally, S. W. Chen and Peng (2021) found that team

cohesion can decrease team members' turnover intention, and Ronen and Mikulincer (2009) confirmed that team cohesion can decrease their job burnout.

2.4.5 Team cohesion as a moderator

The studies that discussed the moderating effect of team cohesion focused on the relationship between external factors and innovative behavior or team performance. For instance, S. Chang et al. (2014) found that team cohesion can strengthen the positive relationship between high-commitment work system and employee creativity, Xie et al. (2016) discussed the effect of organizational innovation culture on innovation performance and confirmed the positive moderating effect of team cohesion. In terms of team performance, J. Li et al. (2020) found that team cohesion can strengthen the direct effect of employee–organization relationships on team performance. Similarly, D. Liu et al. (2017) confirmed that team cohesion positively moderates the relationship between team member organizational citizenship and team performance.

2.4.6 Research comment

Although many scholars have explored team cohesion's antecedents, outcomes and moderating effects, the objects of most studies focused on sport teams, college students and scientific teams, studies that take employees and teams in companies as research objectives are very limited, hence many conclusions of existing studies may not apply to business situations and some business contextual factors and enterprises' team characteristics should be taken into consideration. On the other hand, there are relatively few studies examine the moderating effect of team cohesion, thus further studies on it are needed.

2.5 Research on organizational identification

2.5.1 Definition

Organizational identification refers to one's perception and feeling of oneness and belongingness with the organization where an individual defines himself or herself in terms of membership in the organization for which he or she works (Mael & Ashforth, 1992). Organizational identification is derived from social identity theory and reflects one's self-concept and self-identity (Tajfel & Turner, 1979). Organizational identification includes several characteristics: 1) Organizational identification is comprised of cognitive, evaluative and affective components that jointly denote the perception of oneness or belongingness to an

organization (Ashforth et al., 2008; Mael & Ashforth, 1992). 2) Organizational identification is a relational and a comparative concept because it defines the individual's relevance to individuals in other organizations. 3) Organizational identification is different from other types of social identification (Ashforth & Mael, 1989). Meanwhile, other scholars defined organizational identification from other perspective. For example, Dutton et al. (1994) defined organizational identification as "the degree to which a person defines him or herself as having the same attributes that he or she believes define the organization". From the emotional perspective, O'Reilly and Chatman (1986) defined organizational identification as employees' emotional satisfaction and identification with the organization.

Many scholars have divided organizational identification into different dimensions. For instance, Mael and Ashforth (1992) argued organizational identification as a single dimensional construct, Karasawa (1991) divided organizational identification into two dimensions: self-identification and other members' identification, Cheney (1983) classified organizational identification as membership, loyalty and similarity, Miller et al. (2000) proposed that organizational identification should include three dimensions: cognitive, affective, and behavioral components, Van Dick et al. (2004) suggested that organizational identification should include cognitive, affective, evaluative and behavioral components.

Based on the scenario of research, we followed Ashforth and Mael (1989) to explore organizational identification from the perspective of single dimension.

2.5.2 Measurement

Previous studies indicates that most scholars regarded organizational identification as an unidimensional construct and used a 6-item scale developed by Mael and Ashforth (1992), which is widely used currently. Additionally, Cheney (1983) developed a 25-item scale based on three-dimensional definition of organizational identification, which includes membership, loyalty and similarity, Van Dick et al. (2004) developed a 30-item scale that includes cognitive, affective, evaluative and behavioral components.

In this thesis, we defined organizational identification followed, thus we used the scale developed by Mael and Ashforth (1992) to assess organizational identification, sample items are "When someone criticizes my company, it feels like a personal insult", "When someone praises my company, it feels like a personal compliment", and "If a story in the media criticized my company, I would feel embarrassed".

2.5.3 Antecedents

Previous studies have focused on the research about organizational context factors, which include leadership styles, corporate social responsibility, and organizational environment.

For leadership styles, many scholars have investigated effects of different leadership styles on organizational identification. For instance, García-Guiu et al. (2015) and Niu et al. (2020) found that authentic leadership can build and develop a process of creating a social identity, give employees more caring and perception of fairness, thus improve their organizational identification. In addition, some scholars found that improving employees' respect for their organizations and self-esteem, and understanding the meaning of their work can strengthen employees' trust for organization and thus improve their organizational identification (Demirtas et al., 2017; Qi & Ming-Xia, 2014; W. Zhu et al., 2015). For the research about paternalistic leadership, Luu and Djurkovic (2019) found that benevolent leadership and moral leadership can make organizations more attractive, and modify employees' self-identity and identify with the organizations, hence improve their organizational identification. On the contrary, authoritarian leadership will lead to employees' psychological distress and undermine their socio-emotion, then have negative effect on organizational identification. Similarly, Y. Wang et al. (2019) also confirmed that benevolent leadership and moral leadership are positively related to organizational identification, however, authoritarian leadership are negatively related to employees' organizational identification.

For other leadership, Lythreatis et al. (2019) found that participative leadership can improve employees' perception of positive corporate social responsibility, boost their sense of pride as membership, hence strengthen their organizational identification. Freire and Gonçalves (2021) argued that responsible leader aims at achieving business vision that stakeholders commonly recognized, and caring for employees. In the meantime, responsible leader shares the values that are centered on consideration for others to employees, and thus improve employees' organizational identification. Similarly, R. Li et al. (2016) suggested that self-sacrificial leader performs the behaviors of sacrifice themselves for collective, and tells their employees that it is worth to dedicate their efforts, which will help increase the value and attraction of organizational identification for employees, hence promote their organizational identification. Hansen et al. (2014) found that interpersonal leadership can satisfy employees' fundamental need of belongingness and drive them to seek connection with others, providing the description of group's success, thus has positive effect on employees' organizational identification. Yuan et al. (2020) indicated that servant leadership can build and develop an environment that can

motivate employees' personal development and their positive perception of their organization's image. C. Zhao et al. (2021) also confirmed that charismatic leadership is positively related to organizational identification. W. Liu et al. (2016) explored the impact of negative leadership on employees' organizational identification, and found that abusive supervision can decrease employee's psychological safety, harm their trust to their leaders, thus is negatively related to organizational identification.

In addition, some scholars study the effect of language on organizational identification. For example, Mayfield et al. (2021) and Yue et al. (2021) examined the effect of motivating language on employees' organizational identification. They found that motivating language can enhance employees' culture knowledge and emotion to improve their organizational identification. C. Liu et al. (2021) explored the role of leader humor and found that leader affiliative humor was positively related to organizational identification, but leader aggressive humor had adverse effects. Schuh et al. (2012) investigated leader's identification's effect and found that leaders with high level of organizational identification will improve employees' organizational identification.

For corporate social responsibility, many scholars have researched effects of corporate social responsibility on organizational leadership from different perspectives. From the perspective of perception, many scholars found that high level of perceived corporate social responsibility can improve employees' organizational identification. For example, Afsar et al. (2018) indicated that employees' perception of corporate social responsibility can strengthen fit of values between employees and companies, then make their sense of attachment and responsibility stronger, thus improve their organizational identification. Cheema et al. (2020) argued that corporate social responsibility is activities that are conducive to society and environment, and activate employees and improve companies' attractions to employees, and incorporate companies' values into self-definitions. De Roeck et al. (2016) confirmed that corporate social responsibility can strengthen employee's perceived external prestige, which can enhance the sense of pride, thus improve their organizational identification. Shah et al. (2021) took Malaysian hotel industries as research objectives, examined the effects of corporate social responsibility on employees' organizational identification, and found that corporate social responsibility has positive impacts on organizational identification. Shin et al. (2016) took Korean hotels as research objectives, and confirmed that corporate social responsibility is positively related to organizational identification. Q. Tian and Robertson (2019) also confirmed the positive effect of corporate social responsibility on organizational identification. When employees' empathy is stronger, the positive effect of corporate social responsibility on

organizational identification is stronger. Hameed et al. (2016) categorized corporate social responsibility as internal corporate social responsibility and external corporate social responsibility, and examined their influence on organizational identification respectively. They found that internal corporate social responsibility can strengthen employees perceived internal respect, then improve organizational identification. In addition, external corporate social responsibility can improve perceived external prestige to exert positive effects on their organizational identification. Some scholars further studied the effect of internal corporate social responsibility on organizational identification. For example, K. Ghosh (2018) investigated perceived internal image of corporate social responsibility and confirmed that it can enhance employees' affect-based trust to improve their organizational identification. Additionally, J. Kim et al. (2020) categorized corporate social responsibility as economic corporate social responsibility, legal corporate social responsibility, ethical corporate social responsibility, and philanthropic corporate social responsibility and explored their effects on employees' organizational identification. Rodrigo et al. (2019) found that strategy- corporate social responsibility fit also has positive effects on employees' organizational identification.

In terms of organizational environment, some scholars have explored organizational justices' effect. For instance, Kwon Choi et al. (2014) indicated that individuals tend to find their social identity, which have great impacts on organizational affective attachment and self-concept. It is organizational distributive justice, procedural justice, and interpersonal justice that can help employees to find their self-definition, thus improve their organizational identification. Asadullah et al. (2017) also investigated the effects of information justice and interpersonal justice on employees' organizational identification, and took 656 employees in Pakistan's bank as research objectives, and confirmed that information justice and interpersonal justice are positively related to organizational identification, and the fulfillment psychological contraction mediated the relationship between them. H. He, Zhu, et al. (2014) focused on the research of procedural justice and confirmed that procedural have positive effects on organizational identification. Similarly, A. Malik et al. (2019) studied the effect of overall justice judgement on organizational identification, argued that employees' attitudes toward justice also have impacts on organizational feeling, thus affect organizational identification. Based on 228 employees of multinational enterprises in both France and Spanish, Soenen and Melkonian (2017) also found that overall justice judgement can improve employees' organizational identification. Adamovic et al. (2020) explored the effect of procedural justice climate on organizational identification, argued that high level of procedural justice climate means that organizational management, structure and procedure are of justice, and empirically

tested based on more than 4000 employees from over 500 workplaces, and confirmed the positive effect of procedural justice climate on employees' organizational identification.

Some scholars also confirmed the positive effects of human resource management practice on organizational identification. For example, Newman et al. (2016) studied the effect of socially responsibility HRM on organizational identification, and found that employee-oriented HRM is positively related to organizational identification, but legal compliance HRM and general corporate social responsibility HRM have no significant effects. Chaudhary (2020b) examined the influence of green HRM on organizational identification, indicated that green HRM aims at the achievement of the development of green sustainability, can improve the external image of organizations, satisfy employees' self-esteem, thus improve employees' organizational identification. Shen et al. (2018) also studied the effects of green HRM on organizational identification, and confirmed that green HRM has positive role on organizational identification. When individuals' perception of organizational support can strengthen the positive relationship between green HRM and organizational identification. F. Liu et al. (2020) investigated high-performance work systems' influence on organizational identification, suggested that it can improve employees' capability, motivation and offer more opportunities, thus employee can strengthen the psychological connection with organization, which improves organizational identification

Additionally, other scholars have confirmed other factors' influence on organizational identification. For example, H. He, Pham, et al. (2014) found that perceived organizational support can enhance employees' appreciation and trust to organization, thus improve organizational identification. Based on Chinese sample, Shen and Benson (2016) also studied the effect of organizational support on organizational identification, and confirmed the positive relationship between them. Astakhova and Porter (2015) suggested that harmonious work passion and obsessive work passion have positive effects on organizational identification. Schuh et al. (2016) explored the effects of regulatory focus on organizational identification, and found that promotion focus is positively related to organizational identification, but prevention focus is negatively related to organizational identification. W.-M. Hur et al. (2017) took 175 South Korea's flight attendants as research objectives, and found that organizational virtuousness perceptions can improve organizational identification. Lu et al. (2021) studied job security's influence on organizational identification, and confirmed that job security can make employees feel that organization care their values and offer them stable jobs, hence strengthen organizational identification.

Some studies have discussed the effects of negative factors on organizational identification.

For example, C. H. Wu et al. (2015) explored work ostracism's influence on organizational identification, indicated that in the context of workplace ostracism, organizations do not care for employees' happiness and value their contribution, which make employees doubt their organizational values, hence harm organizational identification. Ye et al. (2019) examined the effect of negative workplace gossip based survey of 574 subordinate-supervisor dyads, and they confirmed that negative workplace gossip is negatively related to organizational identification. Yao et al. (2020) found that workplace bullying undermines employees' relational resources, which leads to emotional exhaustion, thus has negative effects on organizational identification.

2.5.4 Outcomes

The studies of organizational identification can include three aspects: employee behaviors, psychology and attitudes.

For employee behaviors, many studies have confirmed that organizational identification has positive effects on organizational citizenship behavior, including individual-level organizational citizenship behavior and team-level organizational citizenship behavior. For example, Goswami et al. (2018) indicated that employees with organizational identification can internalize organizational characteristics, adopt positive actions, and found that organizational identification positively affects organizational citizenship behavior. Newman et al. (2016) also studied the effect of organizational identification on organizational citizenship behavior. They took Chinese employees as research objectives, and confirmed that organizational identification has positive effects on organizational citizenship behavior. Shen et al. (2018) also confirmed the positive effect of organizational identification on organizational citizenship behavior.

Additionally, many scholars have demonstrated the positive roles of employees' voice behaviors. For example, J. Li et al. (2018) argued that employees with organizational identification attach their interests and values to their organizations closely, hence they are more willing to adopt positive voice behavior. Qi and Ming-Xia (2014) also explored the effect of organizational identification on voice behavior. Based on the survey of 293 supervisor-subordinate dyads, they confirmed the positive relationship between organizational identification and voice behavior. W. Zhu et al. (2015) found that organization identification can enhance not only employees' voice behavior, but also job performance.

Some scholars also explored organizational identification's influence on innovative behaviors. For example, W. Liu et al. (2016) indicated that employees with organizational identification will align individual goals with organizational goals, and be willing to take more

efforts to achieve organizational goals and values, thus improve their creativity. M. Zhang et al. (2021) analyzed data of 170 supervisor-subordinate dyads, and confirmed that organizational identification is positively related to creativity. C. Zhao et al. (2021) took new generation employees as research objectives, and found the positive relationship between organizational identification and innovation performance.

For job performance, Astakhova and Porter (2015) collected data of 233 subordinate-supervisor dyads from Russia, and found that organizational identification can improve employees' performance. Collins et al. (2019) found that organizational identification can improve employees' productivity, then enhance their job performance. Demir et al. (2015) found that organizational identification can not only improve job performance, but also decrease Counterproductive work behavior. H. He et al. (2015) studied Chinese employees' organizational identification, and confirmed the positive effect on their performance. Additionally, some scholars further discussed types of job performance. For example, Marique et al. (2013) found that organizational identification can strengthen not only employees' in-role performance, but also their extra-role performance. J. He et al. (2019) investigated 296 employees in Chinese hotel industries, and confirmed that organizational identification is positively related to task performance. Similarly, Shen et al. (2018) also confirmed the positive effect of organizational identification on task performance.

Some scholars also confirmed the positive effect of organizational identification on green behavior. For example, Chaudhary (2020b) argued that employees with organizational identification tend to adopt behaviors that are beneficial for organizations, then motivate green behavior. Cheema et al. (2020) investigated the effect of organizational identification on organizational citizenship behavior towards environment, and found the positive relationship between them. De Roeck and Farooq (2018) found that organizational identification can improve not only employees' green behaviors, but also their social behaviors. Based on 331 samples from Malaysian hotel industries, Shah et al. (2021) confirmed that organizational identification is positively related to pro-environmental behavior. On the other hand, organizational identification can weaken employees' negative behaviors. For example, Pagliaro et al. (2018) examined the effect of organizational identification on counterproductive work behavior, and found that organizational identification can decrease counterproductive work behavior. Additionally, Irshad and Bashir (2020) and Niu et al. (2020) found that organizational identification can decrease employees' unethical pro-organizational behavior. Monzani et al. (2016) suggested that organizational identification is negatively related to organizational silence.

In terms of psychology and attitudes, Collins et al. (2019) found that organizational identification can motivate employees' job satisfaction. Prati and Zani (2013) also studied psychology and attitudes of employees in Italian health organizations, and found that organizational identification can strengthen not only employees' job satisfaction, but also weaken their turnover intention. Kumar Mishra and Bhatnagar (2010) took Indian pharmaceutical companies as research objectives, further confirmed the negative effect of organizational identification on turnover intention, meanwhile, they also confirmed that organizational identification can enhance employees' affective well-being. Hansen et al. (2014) explored the relationship between organizational identification and work tension, and found that organizational identification can promote employees' work engagement to enhance their organizational commitment and decrease work tension. Similarly, Marique et al. (2013) evaluated 253 employees in engineering enterprises, and found that organizational identification can strengthen employees' affective commitment. Bao and Zhong (2021) also confirmed the negative relationship between organizational identification and turnover intention. Cepale et al. (2021) assessed 890 newcomers in militaries, and confirmed the negative effect of organizational identification on turnover intention. H. He, Zhu, et al. (2014) and Manzi et al. (2021) argued that organizational identification can enhance work engagement.

2.5.5 Organizational identification as a moderator

Previous studies have explored the moderating role of organizational identification on the relationship between external factors and individual behaviors. For example, the research on the relationship between leadership styles and employee behaviors, C. Zhu and Zhang (2020) investigated the effect of servant leadership on employees' innovative behaviors and found that organizational identification moderates the indirect effect of servant leadership on innovative behaviors via knowledge sharing, Qiuyun et al. (2020) found that leader humility can decrease employees' deviant behaviors, and organizational identification can strengthen the negative relationship, C. Liu et al. (2021) confirmed that organizational identification can moderate the positive relationship between leader's positive emotion and job security. For other aspects, H. T. Huang and Lin (2019) suggested that workplace incivility will lead to emotional exhaustion, and organizational can lessen the negative relationship. Kozhakhmet et al. (2020) and De Clercq and Pereira (2020) studied the effects of employees' career development and investments, and confirmed the moderating effects on these positive relationships. Some scholars have discussed organizational identification's moderating role on relationships between internal factors and

employees' psychology and behaviors. For example, Z. Liu et al. (2020) found that organizational identification can weaken the relationship between family financial pressure and family-oriented moral disengagement. P. He et al. (2018) confirmed that organizational identification can decrease the positive effect of compulsory citizenship behaviors on emotional exhaustion.

2.5.6 Research comment

Previous studies have deeply investigated the antecedents and outcomes of organizational identification, but the research about the moderating effects of organizational identification is lacking. Additionally, although some studies have indicated that organizational identification can improve employees' job performance and behaviors, there is not enough attention on the effect of organizational identification on employees' creativity and innovative behaviors.

2.6 Research on performance

2.6.1 Definition

Performance has been always a focus of research and examined as an important outcome in organizations. Performance refers to the extent to which employees meet their job requirements (Podsakoff & MacKenzie, 1989). Previous studies defined performance mainly from the viewpoint of individual. However, the meaning of work performance in the field of organizational behavior has changed over time. The focus of research has moved from jobs and their fixed tasks to a broader understanding of work roles in dynamic organizational contexts (Ilgen & Hollenbeck, 1991), especially the increasing interdependence and uncertainty of work systems (Howard, 1995). Past scholars clarified the meaning of individual performance from an overall perspective. For example, Campbell et al. (1993) suggested performance includes job-specific task proficiency, non-job-specific task proficiency, written and oral communication proficiency, demonstrating effort, maintaining personal discipline, facilitating peer and team performance, supervision and leadership, and management and administration. Based on role theory, Welbourne et al. (1998) argued performance should include job role behavior, career role behavior, team role behavior, and organizational role behavior. J. W. Johnson (2003) classified performance into task performance, citizenship performance, and adaptive performance. In addition, some scholars have defined performance from the viewpoints of citizenship performance. For example, Borman et al. (2001) indicated it is characterized by

conscientious initiative, personal support, and organizational support. Podsakoff et al. (2000) suggested citizenship should include helping behavior, sportsmanship, organizational loyalty, organizational compliance, individual initiative, civic virtue, and self-development.

Recent research mainly divide performance into the following: 1) in-role performance and extra-role performance (J. Hu & Judge, 2017; Reb et al., 2019); 2) task performance and contextual performance (Begall et al., 2020; Y. J. Zhao & Xie, 2020); 3) task performance and organizational citizenship behavior (Ahn et al., 2018; Reb et al., 2019). In-role performance refers to the behavior directed toward formal tasks, duties, and responsibilities such as those included in a job description (Williams & Anderson, 1991). Extra-role behavior refers to activities that are essential for organizational effectiveness but are discretionary in nature (Organ, 1988). Task performance refers to the effectiveness with which job incumbents perform activities that contribute to the organization's technical core either directly by implementing a part of its technological process, or indirectly by providing it with needed materials or services (Borman & Motowidlo, 1993). For contextual performance, Borman and Motowidlo (1993) described it detailly: While performing his or her job, how likely is it that this person would (a) comply with instructions even when supervisors are not present; (b) cooperate with others in the team; (c) persist in overcoming obstacles to complete a task; (d) display proper military appearance and bearing; (e) volunteer for additional duty; (f) follow proper procedures and avoid unauthorized shortcuts; (g) look for a challenging assignment; (h) offer to help others accomplish their work; (i) pay close attention to important details; (j) defend the supervisor's decisions; (k) render proper military courtesy; (l) support and encourage a coworker with a problem; (m) take the initiative to solve a work problem; (n) exercise personal discipline and self-control; (o) tackle a difficult work assignment enthusiastically; and (p) voluntarily do more than the job requires to help others or contribute to unit effectiveness?

Additionally, more and more scholars attach great importance to the performance at team level (J. H. Han et al., 2018; Pak & Kim, 2016) and organizational level (Schneider et al., 2018; Shanker et al., 2017) to explore the antecedents of team performance and organizational performance. This thesis will focus on the research of individual performance and team performance.

2.6.2 Measurement

Researches adopts different methods to evaluate performance based on the purpose of researches and types of performance. For in-role performance or task performance, many

researches adopted a 7-item scale developed by Williams and Anderson (1991). In terms of contextual performance, Motowidlo and Van Scotter (1994) developed a 16-item scale based on the definition of contextual performance by Borman and Motowidlo (1993). Similarly, Kraimer and Wayne (2004) developed a contextual performance with 6 items. For the measurement of team performance, some scholars developed relevant scale. For example, Stewart and Barrick (2000) developed a 8-item scale, Lam et al. (2004) developed a team performance scale with 4 items.

In this research, we measured individual performance using the scale developed by Williams and Anderson (1991). Task performance, one of the dimensions of the scale, is used to assess individual performance, sample items are “Engages in activities that will directly affect his/her performance evaluation”, “Neglects aspects of the job he/she is obligated to perform”, and “Fulfills responsibilities specified in job description”. For the measurement of team performance, we use the 3-item scale developed by Lam et al. (2004), sample items are “This team gets its work done very effectively” and “This team has performed its job well”.

2.6.3 Antecedents and mechanisms

Previous studies mainly have explored antecedents and mechanisms of performance. This thesis will review the studies of individual performance and team performance.

2.6.3.1 Antecedents and mechanisms of team performance

For the research of antecedents and mechanisms of team performance, previous studies focus on three aspects: leadership characteristics, team characteristics and organizational environment.

Scholars have explored the effects of leader characteristics on team performance. For instance, Bachrach and Mullins (2019) found that transactional leadership and transformational leadership can motivate employees to focus on team outcomes, encourage team members to work hard and cooperate to achieve team goals, then improve transactive memory system, which can effectively deal with task information, thus improve team performance. Similarly, they also found that transactional leadership can enhance transactive memory system by rewarding, which also have positive effects on team performance. Lin et al. (2017) confirmed that leader’s charisma can motivate team planning to increase team performance. Lin et al. (2019) argued that ethical leadership can improve the relationship between leader and employee so that increase team performance. Owens and Hekman (2015) found that leader humility can improve team humility, and create promotion focus culture, thus lead to improving team performance. Chiu et al. (2016) also confirmed that leader humility can motivate shared

leadership, thus exert positive effects on team performance, and team positive characteristics and team performance capability moderate the mediating effect.

In terms of team characteristics, previous studies focus on team itself and team members. For team itself, Lin et al. (2017) suggested that goal clarity is beneficial to team planning and thus improve team performance. Gonzalez-Mulé et al. (2014) found that team with autonomy can clarify their goals well, therefore improve their team performance, and performance feedback can moderate the indirect effect of autonomy on team performance. Janardhanan et al. (2019) found that team learning orientation tend to share information, and team members can learn from each other, then promotes team members' cross-understanding, thus they can greatly achieve their team performance. Lin et al. (2017) took tech hybrid-virtual teams as research objectives, and explored the team tone's effects and confirmed that positive team tone can enhance team identification and team cooperation, thus lead to high team performance, but negative team tone harm team identification and cooperation, thus has negative effects. In terms of team members, C. He et al. (2020) suggested that team voice will improve team learning, thus increase team performance, and contingent reward transactional leadership can strengthen the indirect effect of voice behavior on team performance. Based on temporal team, C. M. Santos et al. (2016) examined the effects of shared temporal cognition and temporal leadership on team performance, and confirmed that shared temporal cognition can replace the function of temporal leadership to lessen the conflicts as a result of temporal characteristic, thus improve team performance. Similarly, Abrantes et al. (2018) also investigated temporal team and found that team members' shared temporal cognition can enhance temporal adaption, thus improve team performance, thus decrease conflicts as a result of temporal characteristic and improve members' adaption, but the mediating effect of team preemptive adaptation have no significant between shared temporal cognition and team performance.

For organizational environment, J. H. Han et al. (2018) found that transformational leadership-enhancing high-performance work system have positive effects on team performance. Similarly, Pak and Kim (2016) also confirmed that team manager's implementation of espoused human resource practices can strengthen HRM's effectiveness, therefore improve team performance. In addition, J. H. Han et al. (2020) found that organizational empowerment climate can motivate leaders' empowering leadership, thus have indirect effect on team performance.

2.6.3.2 Antecedents and mechanisms of individual performance

Recent studies of individual performance focus on the impacts of external factors, which

include two aspects: leadership styles and organizational environment.

For leadership styles, many scholars have investigated different leadership styles' influence on employee performance. For instance, Reb et al. (2019) found that leader mindfulness can improve interpersonal justice and lessen employee stress, thus enhance leader-member relationship quality to increase employee performance. F. Yang et al. (2019) suggested that spiritual leadership can improve individual performance via relational energy. Chiniara and Bentein (2016) examined the effect of servant leadership on employee performance, and found that servant leadership can meet employees' need (e.g., autonomy need, competency need and relatedness need) to improve employees' satisfaction, thus improve not only employees' task performance but also organizational citizenship performance. Lin et al. (2020) took knowledge employees as research objectives to investigate the impacts of responsible leadership on individual performance, and confirmed that responsible leadership can improve employees' work engagement, thus enhance their job performance. In the meantime, responsible leadership can improve employees' helping behavior, thus increase their job performance. Lin et al. (2019) found that ethical leadership can improve LMX, hence improve employees' job performance. Similarly, Mo and Shi (2018) also discussed the relationship between ethical leadership and task performance, and found that ethical leadership can improve employees' promotive voice, thus improve their task performance. Based on the survey of 248 subordinate-supervisor dyads, Wei et al. (2018) suggested that authentic leadership can motivate employees' work engagement, thus improve their task performance. Breevaart et al. (2016) also confirmed that transformational leadership can enhance job performance by improving work engagement. Kensbock and Boehm (2016) also studied the effect of transformational leadership on individual performance. They took employees with disability as research objectives, and found that transformational leadership can promote their self-esteem in organizations, and lessen their emotional exhaustion, thus improve their job performance. J. Mao et al. (2019) examined the relationship between leader humility and task performance, and found that leader humility can weaken employees' self-expansion, and improve their self-efficacy, thus increase their task performance. What's more, Schuh et al. (2019) found that leader mindfulness can enhance leader procedural justice enactment, then decrease employees' emotional exhaustion, thus improve their job performance. Other scholars also found that responsible leadership. Some scholars have explored the negative impacts of leadership styles. For instance, Gan et al. (2020) evaluated employees in China, and confirmed that unethical leadership will impair deontic justice, which harms individual performance. A. Lee et al. (2017) found that leader-member exchange ambivalence will trigger employees' negative emotion, and thus has negative effects

on task performance.

In terms of organizational environment, previous studies indicated that human resource management system is one of the most important factors that affect individual performance. For example, Edgar et al. (2021) argued that high-performance system can enhance employees' ability and give employees more opportunity to increase individual performance. J. Story and Castanheira (2020) confirmed that high-performance work system can improve employee performance via increasing authenticity. In addition, A. W. Tian et al. (2016) investigated different types of human resource management's effects on employee performance, and found that ability-enhancing HRM, opportunity-enhancing HRM and motivation-enhancing HRM have positive effects on individual performance. B. Cooper et al. (2019) explored the effect of well-being-oriented human resource management practice, and found that it can enhance social climate, strengthen employees' resilience, and thus improve their performance. Salas-Vallina et al. (2021) also found that well-being-oriented human resource management practice can improve employees' happiness emotion, weaken their emotional exhaustion, and promote their trust, hence improve their individual performance. On the contrary, F. Yang et al. (2021) explored the impact of negative human resource management practice on individual performance and found that in the context that individual pay for performance, guanxi HRM will lead to employees' emotional exhaustion and thus exert negative effect on job performance.

On the other hand, resource and support from others are also have important effects on individual performance. For example, Guan and Frenkel (2019) suggested that training can motivate employee to engage in work and thus improve their task performance and organizational citizenship behavior. Carlisle et al. (2019) found that the more training effectiveness is the higher individual performance are. Way et al. (2018) found that organizational support can improve manager behavioral integrity, and improve employees' organizational citizenship behavior, which in turn improve leader's task performance. Ren et al. (2019) confirmed that human capital can improve LMX, and social capital can also improve job performance by LMX. For other aspects, D. Ghosh et al. (2017) argued that distributive justice and procedural justice can improve employees' organizational embeddedness, and thus increase their in-role performance and extra-role performance. Chaudhary (2020a) confirmed that corporate social responsibility can improve employees' task performance and organizational citizenship behavior. Ma and Peng (2019) indicated that illegitimate tasks harm employee' organizational identification, thus has negative effects on task performance. Naseer et al. (2020) found that some core job characteristics (such as skill variety, task completion, job autonomy, and feedback) can lead to hindrance stressors, thus exerts negative effects on in-role

performance.

Some scholars also investigated the effects and mechanisms of internal factors on individual performance. For example, Zhang et al. (2020) found that employees' exploration can improve their exploitation and lead to high task performance. Hirschi and Spurk (2021) suggested that self-efficacy and proactivity of employee can motivate their ambition to increase their task performance. Ma et al. (2021) explored the effect of stress on job performance and confirmed that challenge stressor will trigger employees' challenge appraisal, and thus improve employees' proactivity and task performance. On the contrary, hindrance stressor will lead to hindrance appraisal, which harm employees' proactivity and task performance. David et al. (2021) found that employees' prosocial identification can improve job performance via interpersonal helping. Ozcelik and Barsade (2018) found that workplace loneliness will decrease employees' approachability and affective commitment to organization, therefore have negative effect on job performance.

2.6.4 Research comment

Previous studies have investigated antecedents of performance such as task performance, contextual performance, and team performance. However, with the rapid change of economic and technology, the definition and nature of performance have been changed constantly. Scholars can focus on the more specific aspect of performance based on the dimensions of performance that scholars have proposed in the past, and combine contemporary factors into the research to explore deeply.

2.7 Summary

Existing scholarly works have extensively explored the intricate relationships between leadership and performance. However, certain gaps persist in our understanding of the specific impacts of functional leadership on team performance and authentic leadership on individual performance. The research landscape reveals that the exploration of functional leadership remains primarily theoretical, with a notable absence of empirical investigations into the antecedents, outcomes, and influencing mechanisms of functional leadership. Particularly lacking is empirical research scrutinizing the role of functional leadership in team performance dynamics.

Similarly, studies focusing on authentic leadership and its impact on individual performance, including the mediating role of psychological capital, have often overlooked the

unique characteristics of new-generation employees and the intricate dynamics that define their relationships with their leaders. Furthermore, while a considerable body of research has validated the mediating effect of individual psychological capital between leadership styles and individual performance, there is a noticeable gap in the literature when it comes to understanding team psychological capital at the team level.

Turning attention to moderating effects, the literature has touched upon the moderating influence of team cohesion and organizational identification. However, these investigations are still relatively scarce, and studies on team cohesion tend to concentrate on specific contexts like sports teams or scientific research teams. There's a clear deficit in research exploring the impact of team cohesion on more conventional enterprise organizations.

Hence, this study seeks to bridge these gaps by thoroughly investigating the impact of functional leadership on team performance and authentic leadership on individual performance. Moreover, it aims to shed light on the moderating influences of team cohesion and organizational identification at both the team and individual levels. Through a comprehensive examination of these dimensions, this research aspires to offer nuanced insights that can inform leadership practices and performance management in diverse organizational contexts. The ultimate goal is to contribute substantively to the current body of knowledge in the field and provide actionable recommendations for organizational leaders and practitioners.

Chapter 3: Theory and Hypotheses

The main content of this chapter includes theoretical background and research hypotheses.

3.1 Theoretical background

3.1.1 Social cognitive theory

Social cognitive theory points out that human activities are determined by the interaction of individual behavior, individual cognition and other individual characteristics, and individual's external environment (Wood & Bandura, 1989). These three factors affect each other, but not necessarily at the same time, and the effect is not immediately apparent. It is only over time that the interaction between these factors becomes significant. According to social cognitive theory, people are not only the shaper of the environment, but also the product of the environment. This process is also known as "reciprocal determinism". On the basis of this process, an analytical framework for the co-determination of human activities by environment, behavior, individual psychology, and cognitive processes is developed.

In the field of organizational management, social cognitive theory mainly explains the following questions: (1) How people develop cognitive, social, and behavioral competencies through imitation; (2) How people develop a belief in their own abilities so that they can use their knowledge and skills effectively; (3) How people develop individual motivation through goal systems (Bandura, 1988). Based on the above three questions, social cognitive theory can be divided into the following aspects.

3.1.1.1 Enhance competence by imitating role models

According to social cognitive theory, people can learn indirectly by observing the behavior of others (Bandura, 1997; Wood & Bandura, 1989). The process of individual imitation learning mainly includes four processes: attention, information retention, behavior generation, and motivation (Bandura, 1986). Attention processes determine what people selectively observe in imitation and what they extract from the ongoing imitation activity. Information retention involves the active process of transforming and reorganizing event information in the form of rules and concepts. The process of behavior generation refers to the transformation of symbols

and concepts into actual actions by individuals. In this process, the main behavior patterns of the individual are formed, and this behavior model is also compared with other conceptual models. Motivation mainly includes direct, substitute, and self-generated motivation. People are motivated by the success of others like them and don't pursue behaviors that often lead to bad consequences. Standards of personal behavior provide a further source of motivation. People's self-evaluation of their own behavior determines which observational learning activities they are most likely to engage in. Through this process, people acquire appropriate skills and basic competencies, and through role-playing, practice how to deal with the various situations they have to deal with in the work environment, receive instructional feedback, and eventually become proficient in these behavioral skills in a self-directed way, building personal confidence.

3.1.1.2 Self-efficacy regulation mechanism

According to the social cognitive theory (Bandura, 1986, 1988), people self-regulate motivation and performance realization in the following ways, the most important of which is to regulate individual self-efficacy. Perceived self-efficacy refers to people's belief that they are capable of mobilizing motivation, cognitive resources and action routes to control events in life. Its main sources include personal experience of success or failure (that is, individuals gain direct experience about their own abilities through their own personal experience) and vicarious experience (by observing others' behaviors and results). Gaining a sense of self-possibility), verbal persuasion (encouragement, evaluation, advice, advice, etc.), emotional and physiological influences. Self-efficacy can affect individual behavior choice and environment creation. People tend to avoid activities that are beyond their cognitive capacity and take on challenges that they think they are capable of implementing or managing. Therefore, when individuals have a stronger sense of self-efficacy, they are more likely to put forward higher goals, have higher motivation to continuously deal with problems and obstacles, withstand various pressures and inhibitions, open their own rigid way of thinking, and put forward a variety of ways to solve problems.

3.1.1.3 Self-regulation of motivation and behavior based on goal systems

Social cognitive theory states that individuals are capable of self-direction and self-motivation (Bandura, 1988). Individuals will evaluate their own abilities and behaviors by their own internal standards, and achieve self-satisfaction by achieving the goals they set. When individuals are aware of a discrepancy between their own performance and the goals they set,

they are motivated to reduce the discrepancy. On the other hand, if this difference does not exist, the individual will not be motivated and will set up a new goal and challenge. Similarly, unreachable goals can have a negative impact on individuals. Through this self-cognition comparison mechanism, individuals will constantly evaluate their own goals and behaviors, thus continuously motivating employees themselves and promoting the improvement of their abilities. This kind of goal-based self-regulation can provide employees with clear direction, improve their performance and happiness, and motivate them to keep working hard.

3.1.2 Contingency theory of leadership

The contingency theory of leadership, also known as situational leadership theory, originates from the contingency theory, which holds that there is no immutable and universally applicable optimal management theory and method, which requires organizations to choose the most effective management mode according to their internal and external factors. The contingency theory of leadership comes into being on the basis of this viewpoint.

The contingency theory of leadership points out that the emergence of leadership phenomenon is not only the result of the leader's own behavior, but also depends on the combination of the characteristics of the leader and the environment in which the leader lives, because the essence of the leadership process is the interaction between the leader and the leader in a certain leadership environment. Once the leader or the leadership environment is ignored to explore the results of the leader's behavior, it is difficult to deeply understand the overall picture of leadership performance. However, the contingency theory of leadership connects the leader, the leader, and the leadership environment to explain leadership in a more comprehensive and systematic way.

The contingency theory of leadership was first proposed by Fiedler (1967). This theory integrates leadership traits into the study of leader behaviors, classifies situations to analyze the influence and effect of leadership in different situations, and points out that effective leadership behaviors depend on the mutual influence between leaders and the led, as well as the degree of consistency between the situation and leadership behaviors. Finally, the situational factors are summarized into position power, task structure and superior and subordinate relationship. Among them, position power refers to the formal authority the leader has and the degree of support in the organization. Task structure refers to the degree to which the leader is responsible for the work task and the degree to which other related employees are responsible for the work task. The relationship between superiors and subordinates refers to the degree of recognition

and support from employees to their superiors, as well as the degree of care from superiors for employees. In addition, Fiedler's model also divides leadership styles into employee-oriented and job-oriented. An employee-oriented leader is one in which the leader prioritizes maintaining good relationships, while accomplishing tasks is secondary. Job-oriented leadership, in contrast to employee-oriented leadership, puts more emphasis on the importance of getting things done, while maintaining good relationships is secondary.

Later, other scholars have put forward relevant leadership contingency theoretical models. For example, House and Mitchell (1997) put forward the path-goal theory, pointing out that leaders should, according to different environmental characteristics, promote and care about organizational production to help employees identify the path to achieve goals, develop humanistic care, meet the needs of employees, and then help employees achieve goals. Based on this, House and Mitchell (1997) defined the leadership style as indicative leadership (the leader puts forward clear direction and requirements, Enable employees to complete tasks and achieve goals according to work procedures), supportive leadership (leaders provide care and support to employees in an equal and friendly manner), participatory leadership (leaders involve employees in communication and discussion of relevant decisions and listen to employees' opinions), and achievement-oriented leadership (leaders motivate employees by setting challenging organizational goals). Vroom and Yetton (1973) proposed the leader-participation model, connecting leadership behavior with decision-making participation, and proposed five kinds of leadership behavior and 12 kinds of contingency factors. In addition, Hersey and Blanchard (1969) proposed the leadership life cycle model, believing that leaders need to adopt different leadership behaviors according to the maturity of employees. Maturity refers to the degree of an employee's ability and desire to take responsibility for his or her actions, including job maturity and psychological maturity. Job maturity refers to employees' knowledge, skills and experience, while psychological maturity refers to individuals' willingness and intrinsic motivation to complete work. Based on this, Hersey and Blanchard (1969) divided leadership behavior into imperative leadership (the leader gives instructions and requirements for employees' work), persuasive leadership (the leader not only gives guidance to employees, but also encourages employees to improve their enthusiasm), and participatory leadership (inviting employees to participate in decision-making). And support communication) and empowering leadership (empowering employees and giving them the opportunity to work independently).

In short, the contingency theory of leadership requires that future leadership research should not only pay attention to leadership behavior, but also pay attention to the characteristics of the leader and leadership environment factors, so as to explain the results of leadership

behavior from a more systematic perspective.

3.2 Overview of research model

This study integrated social cognitive theory and the contingency theory of leadership to construct a moderated mediation model from the team level and the individual level, which can be divided into two sub-studies. Among them, the first study focused on the team level, aiming to explore the influence mechanism and boundary conditions of functional leadership on team performance, and discuss the mediating role of team psychological capital and the moderating role of team cohesion. The second study focused on the individual level, aiming to explore the influence mechanism and boundary conditions of authentic leadership on individual performance, discuss the mediating role of individual psychological capital, and the moderating role of organizational identification.

According to the first study, at the team level, functional leadership can clarify the team's work objectives, establish a close relationship between the team and the external environment, consolidate and adjust the team structure, and thus improve the team's work effectiveness. Therefore, functional leadership has a significant positive impact on team performance. In addition, according to social cognitive theory, study 1 discussed the mechanism of functional leadership's influence on team performance. Social cognitive theory points out that people can improve their intrinsic motivation and work enthusiasm through example learning, goal setting and adjustment, and self-regulation. In the first study, team psychological capital mediates the effect of functional leadership on team performance. Finally, based on the contingency theory of leadership, study 1 explores the moderating effect of team cohesion on functional leadership and team psychological capital. The first study suggested that team cohesion strengthened the influence of functional leadership on team psychological capital, and thus enhanced the mediating role of team psychological capital between functional leadership and team performance. The conceptual model of Study 1 was shown in Figure 3.1.

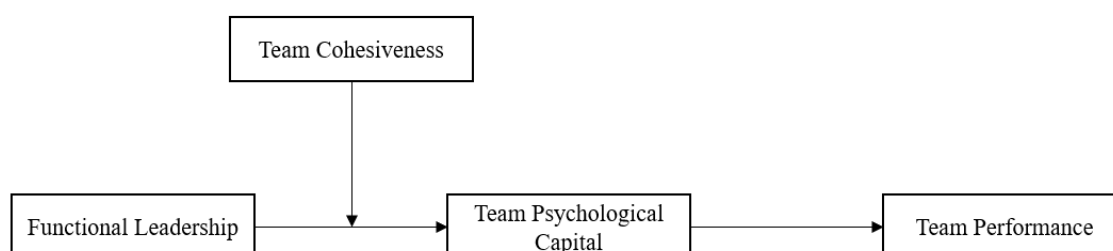


Figure 3.1 Team level research model

According to Study 2, at the individual level, authentic leadership can improve the transparency of the relationship between leaders and employees, improve employees' trust in managers based on leaders' internalized ethical standards, and enhance employees' perception of fairness and justice towards leaders through balanced information processing, thus improving employees' work performance. Therefore, the second study believes that authentic leadership has a significant positive impact on individual performance. In addition, similarly, based on social cognitive theory, Study 2 holds that individual psychological capital mediates the influence of authentic leadership on individual performance. Finally, based on the contingency theory of leadership, Study 2 explores the moderating effect of organizational identification on the relationship between authentic leadership and individual psychological capital. The second study holds that organizational identification strengthens the influence of authentic leadership on individual psychological capital, and further enhances the mediating role of individual psychological capital between authentic leadership and individual performance. The conceptual model of Study 2 is shown in Figure 3.2.

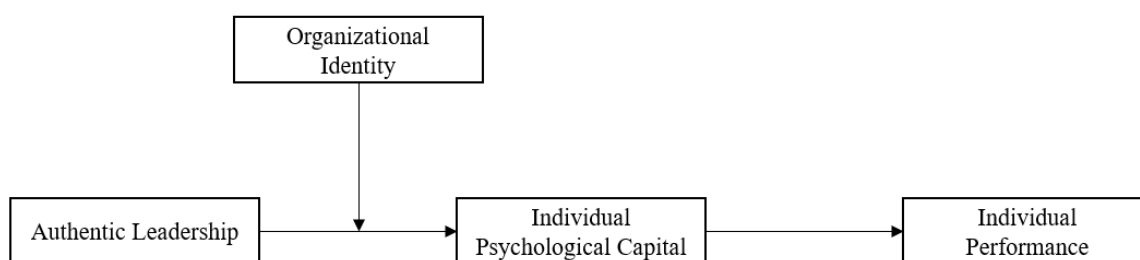


Figure 3.2 Individual level research model

3.3 Hypotheses

3.3.1 Study 1: The influence of functional leadership on team results

3.3.1.1 Functional leadership and team performance

Functional leadership is a form of problem solving based on organization, which involves the cognitive ability of generation, selection, and implementation. The specific performance is as follows: (1) Ensure that the team has the right personnel to jointly complete the team goals; (2) Clarify the team mission, so as to form a common understanding of the team goal, team members see themselves as part of the team, and team cohesion and interpersonal relationship are developed; (3) Formulate performance expectations and setting goals; (4) Organize and plan the work of the team so that team members share their understanding of how best to coordinate

their individual actions; (5) Ensure that all team members can perform well; (6) Understand the team's operating environment, events and communication methods; (7) Promote the feedback process in the team. Functional leadership can be further divided into situational recognition function, strategic recognition function and cooperative function. We believe that functional leadership improves team performance in three main ways.

First, functional leadership can improve team performance by clarifying team goals. Situational recognition function refers to the activities that the leader promotes, assists and motivates team members to participate in the team tenure process, aiming at establishing a contribution and clear assessment of the team task situation and goal definition. Functional leaders will collect relevant information about the external environment and participate in external activities, obtain relevant resources about the external environment for the team, strengthen the connection between team members and the external environment, and help team members have a better understanding of the external environment and the boundary of the team (Carter et al., 2020). By raising team members' awareness of the goals, team members can better understand the team and each other's work, prompting them to actively contribute information and focus more on solving common team problems (Fiore & Schooler, 2004; Fleishman et al., 1991). In addition, maintaining a close connection to the external environment means that team members can constantly assess themselves in response to dynamic environmental changes. According to social cognitive theory, people will constantly balance the relationship between goals and their own internal standards in order to maintain self-motivation. Therefore, functional leadership helps team members to better establish goals in line with the actual situation, and enables them to better devote to their work, reduce the interference caused by the uncertainty of external environment, and thus improve team performance.

Second, functional leadership improves the effectiveness of the team's work procedures through strategic identification functions. The strategic identification function refers to the cognitive activities of the leader himself, which helps team members apply past team situation assessment to strategy making and planning to develop a shared team strategy and plan that supports the completion of team tasks (J. P. Santos et al., 2015). Functional leadership helps improve the quality of communication among team members on strategic issues, and promotes knowledge exchange and information transfer among team members (Carter et al., 2020). On the one hand, the enhancement of the internal interaction between knowledge and information helps team members to be clearer about the team goal and the path to achieve the goal; on the other hand, it also helps team members to jointly improve their own abilities. According to social cognitive theory, the improvement of team members' ability helps the team to pursue

higher work goals, while the improvement of the clarity of team goals helps to promote the intrinsic motivation of team members and enable them to continuously overcome difficulties. Therefore, the function of strategic identification can promote the team to make strategy formulation and plan according to expected problems in advance when facing difficulties and challenges, and promote the thinking model of team members to be more consistent (Zaccaro et al., 2001). It is more conducive to the acquisition, exchange and absorption of team knowledge (Bick et al., 2018; J. P. Santos et al., 2015) to promote the common progress of team members and improve team performance.

Finally, the cooperation function includes that the leader encourages team members to supervise each other, monitor their behaviors, monitor the progress of goal realization, and the interdependence and synchronization of team members. Under the guidance of functional leadership, team members will not restrain their work behaviors due to free riding. Instead, they urge each other to take the initiative to undertake various team tasks, improve the interaction and connection among team members, and thus improve the effectiveness of team work (DeChurch & Marks, 2006). This process can not only improve the synchronization and connection of work among team members, but also act as an observer to learn other members' behavior patterns and strengths during the process of mutual inspection. According to the social cognitive theory, team members will acquire indirect experience through observation, retain and absorb the information obtained through observation, convert them into actual actions, motivate them to try to use these behaviors in the workplace, and further improve their ability to master these behaviors. Improve the effectiveness of their actions and ultimately improve the ability of the whole team. At the same time, functional leadership can also mitigate the negative impact of the dynamic external environment on the cooperation within the team, because the mutual attention between team members enables them to find and solve problems faster, and also improves their ability to prevent problems and cope with emergencies. Team members will feel more support from other team members. It is conducive to maintaining the psychological security and common psychological model of team members, thus improving the effective implementation of team work (Carter et al., 2020).

In a word, functional leadership provides a variety of strategic or non-strategic resources to the team, meets the team's work needs, improves the team's ability to identify, discover and solve problems (Maynard et al., 2017), optimizes the internal structure of the team, and improves the cooperation and interaction among team members. Furthermore, the initiative and initiative to achieve team goals will be improved (Carter et al., 2020). Based on the above, we propose the following hypothesis:

Hypothesis 1-1: Functional leadership is positively correlated with team performance.

3.3.1.2 The mediating effect of team psychological capital

Team psychological capital is a kind of collective positive psychological state, which is the product of dynamic interaction and coordination among team members. This dynamic interaction is more than the sum of individual attributes. Consistent with individual psychological capital, team psychological capital also includes four dimensions: team efficacy, team hope, team resilience and team optimism. According to social cognitive theory, people improve their self-efficacy under the action of various factors (e.g., experience, example, verbal persuasion, and so on), strengthen employees' self-cognition and tenacious self-belief, and improve employees' positive emotions. Based on this theory, we believe that functional leadership can improve team psychological capital by improving team efficacy, team hope, team resilience and team optimism.

First, functional leadership can improve team effectiveness. According to social cognitive theory, people can promote self-efficacy through personal experience of success or failure, vicarious experience, verbal persuasion, emotional and physiological influences. On the one hand, functional leadership will provide task-oriented leadership behaviors, promote team members' understanding of task requirements and operational processes, and obtain relevant information. For example, through the strategic identification function, leaders establish positive communication channels and target direction, and provide timely and clear performance feedback (Timothy A. Judge et al., 2004). This support helps to improve team members' understanding of team goals and have a stronger sense of team. On the other hand, leaders also give individual-oriented leadership behaviors, such as conflict management, promoting mutual respect and trust, and trust in employees' abilities (Carter et al., 2020; Homan et al., 2020) to meet the needs of team members, stimulate employees' positive emotions, and improve team members' trust in leaders and organizations. In addition, functional leadership on the whole presents a positive image of serving the team, which helps team members to actively learn from the behavior and thinking mode of functional leaders by observing them and taking them as examples, so as to promote team members to be more team-oriented and help each other to further improve their sense of self-efficacy.

Second, functional leadership can increase team members' hopes for the team, because the leader, through formal or informal means, helps the team identify obstacles that prevent the achievement of goals and propose and implement feasible solutions (Maynard et al., 2017; Zaccaro et al., 2001). According to social cognitive theory, people have the ability of self-

guidance and self-motivation, and keep their motivation continuous by setting challenging goals. When there is an appropriate difference between the goal and people's own standards, the more easily the individual's own self-motivation and motivation can be effectively stimulated. Functional leadership helps employees to have a better understanding of team goals, and enables team members to make sub-goals that match their team goals, which helps them better prepare for potential problems in advance, especially under the support and guidance of functional leadership, they are more able to deal with various problems in a positive attitude. At the same time, functional leadership can strengthen the connection between team members and the external environment, so that team members can better adapt to and cope with the dynamic changing environment and emergencies (Carter et al., 2020), and further improve the ability of employees to flexibly cope with various unknown situations. All in all, with the support of functional leadership, team members can face difficulties with a more positive attitude and develop solutions more openly.

In addition, functional leadership improves team resilience. According to social cognitive theory, individuals can improve their tough self-belief through social cognition. Functional leadership provides support to the team and team members, clarifies team goals, provides more goal-related information, and promotes team members to have higher abilities and confidence, all of which provide a foundation for the team to cope with various challenges more strongly. In addition, the cooperation function requires team members to supervise each other, monitor the progress of the implementation of goals, promote communication and exchange among team members, and further strengthen and consolidate the cooperation and common mental thinking mode among team members (Barnett & McCormick, 2016; Carter et al., 2020; Eseryel et al., 2020; Zaccaro et al., 2001). Team members are more consistent psychologically, and maintain their dependence and contact with each other in tasks (Barnett & McCormick, 2016; J. P. Santos et al., 2015), which enables the team to deal with and solve difficulties more continuously without giving up.

Finally, the team had a better level of optimism. Adequate support provided by functional leadership to team members not only provides resources conducive to the success of team tasks and helps team members to better develop and implement effective solutions, but also echoes the needs of each team member to provide diversified support and help (Homan et al., 2020). This help and support allow team members to realize that they are not alone, and also increases their ability to take diverse approaches to achieving team goals. Secondly, functional leadership helps team members to better understand the goals, and it also helps team members to better prepare for various problems and challenges, and stay calm in crisis. On the other hand, under

the role of functional leadership, team members are more united, support and help each other, complement each other's advantages, and assign tasks more clearly, which encourages team members to work together to achieve team goals (J. P. Santos et al., 2015). Therefore, we propose the hypothesis:

Hypothesis 1-2: Functional leadership is positively correlated with team psychological capital.

According to social cognitive theory, when people have a higher sense of self-efficacy, more clear goals and internal performance standards, they will be more motivated to keep working hard and give themselves enough positive and negative reinforcement to promote themselves to achieve goals. We believe that team psychological capital means that the team has a higher sense of efficacy, hope, resilience, and optimism, all of which promote the team to have a higher team performance.

Specifically, team efficacy is manifested as the perception of individual team's ability to achieve goals. Teams with high team efficacy are better able to make informed and effective decisions and allocate team tasks efficiently (Lewis, 2003; Rego et al., 2019) helps to improve the common spiritual persistence and commitment of team members to the goal, improve the team awareness, and make team members more confident in completing tasks (West et al., 2009) and more willing to continuously solve problems (Bandura, 1997). In addition, teams with a high sense of team self-efficacy are more willing to propose challenging goals for themselves, thus improving team performance. Second, promising teams are better able to identify goals and propose multiple options for achieving them (Snyder et al., 1991). Therefore, when faced with difficulties and challenges, teams with high levels of hope are able to plan well and become more comfortable coping with difficulties, which leads to their success (Snyder, 1994). In addition, optimism means that the team is better at establishing positive adaptive measures rather than choosing to avoid difficulties (Brissette et al., 2002). In such a team atmosphere, team members are more determined and more conducive to putting forward ideas to solve problems (Dimas et al., 2022), which is conducive to the success of the team. Finally, a high level of team psychological capital means a high level of team resilience. In such a team atmosphere, team members are more willing to help each other, which encourages them to maintain a positive attitude and pursue more satisfactory work performance (Maddi, 1987). Even in the event of failure, team members are able to quickly recover from the grief and re-evaluate, thus better matching the team members to the task (Owens & Hekman, 2015; Rego et al., 2019).

Although the current research on the impact of team psychological capital on team results

is quite limited, remarkable progress has been made. For example, Rego et al. (2019) found that team psychological capital can improve team performance by improving the effectiveness of team task allocation. Tho and Duc (2020) found that team psychological capital is conducive to team exploratory learning and excavation learning, so as to improve the team's innovation ability. Bogler and Somech (2019) found that team psychological capital can improve team organizational citizenship behavior. Similarly, Dimas et al. (2022) also found that team psychological capital can promote team innovation behavior by improving team learning. Marques et al. (2022) found that team psychological capital can promote the self-management behavior of the team, which is conducive to the improvement of the team process. Gonçalves and Brandão (2017) found that team psychological capital can promote team creativity. J. Han et al. (2021) found that team psychological capital can improve team performance. C. M. Wu and Chen (2018) found that team psychological capital can not only improve team creativity, but also improve team organizational commitment. In combination with the above positive results on team psychological capital, we propose the following hypothesis:

Hypothesis 1-3: Team psychological capital is positively correlated with team performance.

Combined with hypothesis 1-2 and hypothesis 1-3, functional leadership helps team members to clarify team goals, optimize the internal structure boundaries of the team, provide task-related or personal-related resources and support, and promote team members to establish close information connections with the external environment through strategic identification function, situational identification function, and cooperation function, thus encourage team members to maintain a shared thinking mode and rely on each other to support each other. These functions promote the improvement of team capabilities, make team members more confident in their own abilities to complete the goals expected by the team, improve team members' hope for team success, build positive cognition and emotion, and further strengthen team resilience and team optimism. The comprehensive improvement of team efficacy, team hope, team resilience, and team optimism could also encourage the team to strive to achieve the team goal with a more positive attitude, higher team self-efficacy, stronger will to work, and a more united way of work, and finally improve the team performance. Therefore, this study proposes the following hypothesis:

Hypothesis 1-4: Team psychological capital plays a mediating role between functional leadership and team performance.

3.3.1.3 The moderating effect of team cohesion

Team cohesion refers to the attractiveness and commitment of team members to their team,

team members, and team tasks, including social cohesion and task cohesion. Social cohesion comes from interpersonal attraction among team members, while team cohesion comes from matching individual goals of team members with team work goals and work incentives provided by the team for members. According to the contingency theory of leadership, the result of the leader's behavior towards the team not only depends on the leader's behavior, but also needs to be systematically analyzed in combination with the characteristics of the leader (i.e., the team) and the environment where the leader lives. Based on this theory, we believe that for teams with different levels of team cohesion, the impact of functional leadership on them (including team psychological capital and team performance) is different. Based on this, we take team cohesion as a boundary condition to further explore the moderating effect of team cohesion on the impact of functional leadership on team performance through team psychological capital. Specifically, we believe that when the level of team cohesion is high, the positive effect of functional leadership on team psychological capital is strengthened, thus improving the positive effect on team performance. When the level of team cohesion is low, the positive effect of functional leadership on team psychological capital will be inhibited, thus weakening the positive effect on team performance.

When the level of team cohesion is high, the team has a higher level of task cohesion and social cohesion. On the one hand, a high level of task cohesion means that team members can meet their own needs for the goals or tasks of the team, so they have a high identification (Hagstrom & Selvin, 1965; J. A. Peterson & Martens, 1972). On the other hand, high social cohesion means that team members are attractive to each other, identify with each other, and have higher consistency (Carless & De Paola, 2000; Carron et al., 1985). Therefore, for teams with high levels of team cohesion, they are more likely to respond positively to functional leadership. First of all, a team with high team cohesion is more task- and goal-oriented, and more willing to take active learning and feedback information discussion (Tekleab et al., 2016). When functional leaders use situational recognition functions to feedback relevant information about the external environment or other aspects to the team, they are able to make more rapid and positive behavioral responses. Meanwhile, high team cohesion means strong bond between team members and higher work efficiency (M. H. Chen & Somya, 2018). Secondly, the function of strategic identification helps to clarify team goals and development paths, which responds to the needs of teams with a high level of team cohesion (J. A. Peterson & Martens, 1972). In particular, functional leadership provides help for strategy formulation and implementation to be fully played in teams with a high level of team cohesion. Because they have higher team work efficiency (Hill et al., 2019). Finally, the cooperation function requires team members to

supervise each other and supervise the progress of goal realization. In a team with a high level of cohesion, team members have a higher goal identification and realization pursuit, so they are more willing to agree with the cooperation concept of functional leadership, especially under good interaction and fetters. Team members don't see this type of monitoring as hostile or threatening, but rather as an effective way to improve together. These influence mechanisms enable teams to have a stronger ability and motivation to absorb, transform, and incorporate this information into their behavioral strategies, thus helping them to better adapt to the environment, to be more confident in coping with difficulties, and to maintain a more positive attitude, including hope and optimism, as well as a more determined attitude, and to be more willing to make sustained efforts.

On the contrary, when the level of team cohesion is low, functional leadership will weaken the psychological capital of the team. On the one hand, although the leader's situational recognition function can provide information about the external environment and encourage team members to keep close contact with the external environment, low level of team cohesion makes it difficult for team members to effectively transform these information and resources into their own internal abilities. On the other hand, although the strategic identification function can provide team members with clear goals and enhance the quality of communication among team members, the low level of team cohesion, even under the guidance of clear goals, is difficult to give them enough motivation, because these goals are inconsistent with the needs of team members to some extent. Although team members can build a good surface harmonious relationship with the help of the leader, the difficulty in forming an empirical relationship will hinder the positive influence of functional leadership. In addition, the cooperation function requires team members to monitor each other, which can easily be perceived as a threat to members of a team with low levels of cohesion, although it can motivate team members to work towards team goals to some extent, However, it is also easy to have a negative impact on the internal psychology and cognition of team members because they cannot get the recognition of team members. Therefore, when the level of team cohesion is low, the influence of functional leadership on team efficacy, team hope, team resilience, and team optimism will be weakened. Therefore, we propose the hypothesis:

Hypothesis 1-5: Team cohesion moderates the relationship between functional leadership and team psychological capital, that is, the stronger the team cohesion, the stronger the positive impact of functional leadership on team psychological capital.

Combining hypotheses 1-4 and 1-5, we believe that team cohesion will positively moderate the mediating role of team psychological capital between functional leadership and team

performance. When the level of team cohesion is higher, the team has higher goal orientation and work efficiency, and the relationship between team members is closer and harmonious. Functional leadership helps team members define their goals, and provides support and assistance to further optimize the team structure. These effects respond to the needs of the team with high cohesion, promote the team with high cohesion to make positive responses, effectively internalize the support and help given by the functional leader, and effectively transform it into their internal ability, further improve the team's sense of efficacy, form positive emotions and cognition, and improve the team's level of hope and optimism. Encourage team members to deal with difficulties more patiently and persistently, thus enhancing the positive effect on team performance. On the contrary, teams with low level of cohesion are difficult to respond effectively to functional leadership, because they lack sufficient identification with the team goal, and it is difficult to get enough attraction from other team members, so as to improve their own team cohesion through functional leadership, thus weakening the positive impact of team cohesion on team performance. Based on the above, this study proposes the following hypothesis:

Hypothesis 1-6: Team cohesion positively moderates the mediating role of team psychological capital between functional leadership and team performance, that is, the stronger the team cohesion, the more significant the mediating effect of team psychological capital.

3.3.2 Study 2: The influence of authentic leadership on individual outcomes

3.3.2.1 Authentic leadership and individual performance

Authentic leadership refers to a leader who knows who he is, knows his actions and thoughts, and is believed by others to know himself and others' values/moral perspectives, knowledge and advantages, which can be summarized in four aspects: self-awareness, relational transparency, internalized moral perspective, and balanced processing. Self-awareness refers to understanding how one gains and gives meaning to the world, and how this process of meaning creation affects the way one sees oneself over time. It also refers to showing an understanding of one's strengths and weaknesses and the many facets of the self, including learning about oneself through contact with others and recognizing one's impact on others. Relational transparency is about showing others your true self (as opposed to your false or distorted self). This behavior promotes trust by openly sharing information and expressing true thoughts and feelings, while minimizing inappropriate emotional displays. Internalized moral perspective refers to an internalized, integrated form of self-regulation. This self-regulation is guided by

internal moral standards and values, rather than determined by group, organizational and social pressures, and it results in expressed decisions and behaviors that are consistent with these values. Balanced processing means showing that they objectively analyze all relevant data before making a decision. These people also solicit ideas that challenge their deeply held positions. According to the social cognitive theory, we believe that authentic leadership can improve employees' work performance by strengthening the equal and transparent relationship with employees, strengthening employees' understanding of leaders and acting as role models, and improving employees' internal self-cognition.

First of all, authentic leadership has a high level of self-awareness, which means that leaders have a positive and enterprising mentality, and expect to understand how they are perceived by others and their impact on others through interaction with others, and make up for their shortcomings through learning. On the one hand, authentic leaders create a good atmosphere by showing their true selves to the organization and employees. Because only in this kind of atmosphere, leaders are more likely to obtain the most authentic information about themselves from employees or others and improve their understanding of their own strengths or weaknesses. At the same time, this kind of atmosphere will also improve employees' understanding of leaders, strengthen mutual trust with leaders, improve employees' psychological security (Y. Liu et al., 2018), and reduce work uncertainty caused by information asymmetry between employees, leaders and organizations. Or unnecessary anxiety and waste of energy caused by the fear of leaders making decisions or behaviors that are not conducive to their own interests, so as to encourage employees to better focus on their own work, and make full use of their energy and time into work-related activities to improve their work performance. On the other hand, authentic leaders also expect employees to actively share their own views, rather than out of concerns for the leader himself, so they actively encourage team members to actively express their own opinions (Walumbwa et al., 2008). According to the social cognitive theory, the active encouragement and persuasion of leaders can also improve the initiative of employees, making them more willing to truly reflect their own views and express their opinions about work freely, thus improving organizational vitality. Thus, organizational performance can be improved (B. J. Avolio, Luthans, et al., 2004). In addition, the characteristics of authentic leadership, which is good at self-reflection and self-reflection, also encourage employees to take the leader as their role model. According to the social cognitive theory, employees will imitate real leaders through observation, thus gaining indirect experience and improving their own behavioral ability. Therefore, employees will also improve their self-knowledge and self-reflection through imitation (Lyubovnikova et al., 2017), which is beneficial for employees to check and fill in the

gaps in work and actively learn (Mehmood, Hamstra, et al., 2016; Mehmood, Nawab, et al., 2016) to improve their work ability and ultimately promote their work performance.

Secondly, authentic leaders actively increase the transparency of their relationships with employees. Because authentic leaders attach importance to the establishment of a harmonious interpersonal relationship with employees, and will fully consider and care about the opinions of employees. In this way, leaders openly express their views and feelings and strive to achieve peer-to-peer communication with employees. For example, authentic leaders will actively create an environment of high trust, in which employees' own work initiative and advantages can be fully mobilized, and encourage employees to work more actively and enrich their own way of thinking (Gardner et al., 2005). This kind of supportive working atmosphere is conducive to employees' social cognition and promotes the information interaction between employees and the environment. Employees will not only receive active guidance from leaders and work with more confidence, but also feel the integrity of leaders, which will improve employees' respect and recognition of leaders, promote employees' organizational commitment (Leroy et al., 2012), and promote the improvement of employee satisfaction (Baek et al., 2019; W. Chang et al., 2020). Thus, employees will participate in work more actively (Hsieh & Wang, 2015; Oh et al., 2018; Wei et al., 2018), finally positively affects the improvement of employees' work performance.

In addition, authentic leadership has a higher internalized moral perspective, which means that leaders are more able to adhere to their own internalized moral standards. To be specific, authentic leaders can keep their decisions and behaviors consistent with their own internalized moral standards and values, and take work behaviors guided by these moral standards and values, without interference from other factors. Based on the above, we believe that when employees encounter difficulties, leaders will provide them with some support according to their inner values, which are not affected by other factors. On the other hand, authentic leaders treat all employees with an equal attitude, which will make employees feel the leader's noble moral standards and firm attitude towards moral values, which makes employees feel more support from authentic leaders, thus enhance their trust in leaders and make them maintain a more positive attitude towards achieving job performance. Existing studies also show that authentic leaders maintain their internal and behavioral consistency. When employees feel such consistency, they will increase their trust and satisfaction with leaders, thus improving work performance (Palanski & Yammarino, 2011). Other scholars also point out that leaders with high ethical standards can establish a positive moral atmosphere, which can meet employees' demands for working environment and reduce employees' perceived uncertainty within the

organization, thus improving work performance (Yener et al., 2012). Furthermore, according to social cognitive theory, employees will also actively learn the quality of leaders, and at the same time make their behavior consistent with their own moral standards, which is conducive to reducing the moral dilemma of employees due to moral problems, thus leading to their own internal consumption, reducing unnecessary waste of internal resources, promoting employees to concentrate more and improve their work performance, and encouraging employees to concentrate more and improve their performance.

Finally, authentic leaders can improve employees' work performance by balancing information processing. Balanced information processing means that leaders will actively seek the opinions of employees before making major decisions, and incorporate their opinions into the decision-making process. Meanwhile, leaders will also analyze other relevant information and data to improve the scientific and fair decision making. Based on this, we believe that authentic leaders can fully consider the information provided by employees and deal with it objectively and fairly. Therefore, when leaders seek relevant suggestions or information from employees, employees would realize that they can make actual contributions and values by telling their opinions to leaders, and are more willing to take responsibility in work, and more sure of their importance in work, so they are more active in work (Oh et al., 2018), and thus improve work performance.

Existing research has also fully proved the impact of authentic leadership on individual performance of employees. For example, Duarte et al. (2021) found that authentic leadership can improve employees' organizational emotional commitment and creativity, and have a positive effect on their own performance. Luu (2020) found that authentic leadership can improve employees' job performance by improving their job remodeling. Munyon et al. (2021) found that authentic leadership can improve employees' job satisfaction, and then positively affect employees' job performance. Similarly, this study believes that authentic leadership can improve employees' work performance by improving their cognition and ability. Because authentic leaders can establish a free, transparent, and authentic organizational atmosphere in the team, and promote the frank interaction and communication between leaders and employees, and between employees. Under this organizational atmosphere, employees can be more daring to express themselves and put forward some new ideas (Rego et al., 2012), which is not only conducive to employees' self-expression, but also can reflect their own values. At the same time, authentic leaders deliver more transparent and authentic moral values and standards, further stimulate employees' positive behavior, improve their sense of responsibility, and ultimately improve their work performance. Therefore, this study proposes the following hypothesis:

Hypothesis 2-1: authentic leadership is positively correlated with individual performance.

3.3.2.2 The mediating role of individual psychological capital

As a kind of positive mental resources, psychological capital mainly consists of self-efficacy, hope, optimism, and resilience. Self-efficacy means that an individual has the confidence to undertake and make the necessary efforts to successfully complete a challenging task. Optimism refers to the individual's positive evaluation of present and future success. Hope refers to an individual's persistence in moving toward a goal and readjusting the path to achieve it if necessary. Resilience means that when individuals are troubled by problems and adversity, they persist, rebound, and even transcend to achieve success. According to social cognitive theory, we believe that authentic leadership can improve employees' psychological capital by improving their self-efficacy, hope, optimism, and resilience.

Specifically, in terms of employees' self-efficacy, authentic leaders actively pursue self-awareness (that is, they expect to know their own strengths and weaknesses, and discover the meaning of their work), so they actively disclose information and make the relationship between leaders and employees transparent. This encourages employees to interact with leaders more actively, and leaders can better understand employees' perceptions and needs and respond better. In addition, authentic leaders balance information processing and encourage employees to share their views. When employees are encouraged by the "advice" from the leader and receive positive feedback from the leader, they can feel the trust from the leader, which will also improve the trust of employees in the leader. Therefore, when leaders solicit opinions from employees, employees are more confident to put forward their own views and ideas. At the same time, feedback from leaders can help employees find shortcomings in their work, optimize and improve their work ability. On the other hand, authentic leaders have higher internalized moral values and standards. They can treat employees' performance fairly and maintain a more inclusive attitude towards them. Therefore, employees have more opportunities and dare to show their own ideas (Walumbwa et al., 2011). In addition, authentic leaders also provide various supports, which, according to social cognitive theory, will eventually translate into employee self-efficacy (Rego et al., 2012). In addition, employees will actively take authentic leadership as an example, which is conducive to improving their self-understanding, further adjusting the relationship between their standards and expected goals, and improving employees' self-motivation.

In terms of employees' hopes, authentic leadership provides a transparent, open, relaxed, and inclusive cultural environment to improve employees' beliefs and ideas in self-management,

and thus enhance their hopes in work (Ilies et al., 2005; Walumbwa et al., 2008). At the same time, authentic leaders also take the initiative to communicate with employees about their perceptions and ideas related to performance expectations and the work environment. In addition, authentic leaders have higher internalization of moral values, and their behavioral decisions have higher stability and are easy to change due to the influence of external factors. At the same time, the fair processing of information by authentic leaders also helps employees to be clearer about their own work goals and directions. Existing studies also show that authentic leadership can effectively improve employees' job security (Y. Liu et al., 2018). In this situation, employees face less uncertainty about their work, are less worried about the risks of expressing their thoughts and opinions, and can more clearly follow the established path to achieve their work goals. In the face of difficulties, employees will feel less isolated, because leaders will provide them with timely feedback and support, thus further enhancing employees' hopes (Thompson et al., 2015).

In terms of employee optimism, authentic leaders have high self-awareness, and they often have a clear understanding of their own strengths and weaknesses. Therefore, authentic leaders can adopt a more inclusive attitude and consciously encourage subordinates to maintain their own opinions, give full play to their own subjective initiative, support and listen to employees' statements on organizational issues. This will help employees feel cared for by the organization, instead of worrying that their needs won't be met. In addition, existing studies also show that authentic leadership can encourage employees' positive emotions and cultivate their self-regulation ability (Amunkete & Rothmann, 2015). At the same time, the internalized moral perspective in authentic leadership makes employees feel more emotionally secure because they are free to express their opinions and ideas, no matter how unconventional and contradictory they may be (N. Malik & Dhar, 2017). All of these can make employees more optimistic about various problems in the organization and believe that these problems will be properly solved in the end.

In the same way, authentic leadership increases employee resilience. On the one hand, the relational transparency, balanced information processing, and internalized moral perspective of authentic leadership improve the certainty of employees to achieve their goals. On the other hand, authentic leadership also provides support and help to employees to improve their self-coordination ability and positive emotions. When employees are faced with pressure or adversity, authentic leaders are often able to shoulder their responsibilities and help employees make positive feedback on difficulties and challenges, guide employees to achieve final success, and help employees overcome difficulties is conducive to improving the toughness of

subordinates (B. J. Avolio & Walumbwa, 2006). In addition, according to the social cognitive theory, employees will also take the initiative to learn the noble qualities of authentic leadership. For example, authentic leaders will constantly think and reflect on themselves. Learning authentic leadership to improve their self-awareness can also help employees better understand themselves and define their own positioning, so as to strengthen their will. It helps them to keep up their efforts. Based on the above, we propose the following hypothesis:

Hypothesis 2-2: Authentic leadership is positively correlated with individual psychological capital.

On the other hand, the increase of psychological capital will also improve the individual performance of employees. First of all, self-efficacy means that employees have more confidence in themselves, higher work motivation, and stronger self-regulation ability to complete and achieve their own work goals. Therefore, highly efficient employees tend to fully mobilize their own work enthusiasm through self-motivation, and actively use existing resources to master the skills needed to improve their work ability, so as to achieve goals and improve their work performance. Secondly, hopeful employees are more able to successfully face the difficulties encountered in the work process, with clear goals and firm beliefs. Hopeful employees tend to have clear work goals and make relevant action plans in advance according to the nature of the goals and the working environment (Larson & Luthans, 2006). Therefore, when faced with difficulties in the work process, these employees will see obstacles as opportunities and challenges for development, and generate internal driving force to use various solutions to solve problems and challenges. When the existing solution is difficult to meet the current needs, they will also take the initiative to explore and develop other solutions and reformulate them to meet the needs of solving the problem, so as to achieve work objectives and improve work performance. In addition, employees with high resilience can help employees better adapt to major difficulties (Masten & Reed, 2015) and have the ability to recover themselves in challenging events, rather than withdraw easily. This ultimately improves their behavioral outcomes and work efficiency (Goldsmith et al., 1997). In addition, employees with high tenacity are more willing to try new things and pay attention to the development of mental abilities. They will find a new path and actively adapt to the negative factors and dynamic external environment in the work process, thus further improving work performance. Finally, optimistic employees can maintain positive expectations for themselves to meet their work needs and achieve their work goals (James B. Avey et al., 2009; Luthans, Youssef, et al., 2007). They are more likely to interpret their work successes and failures in a positive way and turn those failures into their own perceptions in a timely manner, making up for their lack of

skills or abilities and shifting the focus to how to take advantage of other potential opportunities. In addition, optimism also contributes to the generation of positive self-fulfilling prophecy, which is the incentive condition for individuals to achieve long-term success. Employees with high optimism will maintain positive emotions and attitudes in the face of challenges at work, which will enable them to analyze from a more multidimensional perspective rather than focusing on failures that have occurred in the work, and encourage employees to learn from their mistakes (Carr, 2004).

In fact, existing research has shown that individual psychological capital can improve employees' positive work outcomes. For example, Bak et al. (2022) found that psychological capital can improve employees' work innovation behavior. Luo et al. (2022) found that psychological capital can improve employees' readiness for change and thus improve their adaptive performance. Xiao et al. (2022) found that psychological capital can reduce employees' psychological distress and thus reduce their turnover intention. Wen and Liu-Lastres (2021) found that psychological capital can promote employees' work participation and happiness, thus improving their job satisfaction and organizational commitment. In short, when employees have high psychological capital, they can integrate hope, resilience and optimism into their work, and believe more in their ability to solve problems at work, and ultimately improve their work performance. Therefore, we propose the hypothesis:

Hypothesis 2-3: Individual psychological capital plays a mediating role between authentic leadership and individual performance.

To sum up, authentic leadership transmits positive values, motivation, goals, and behaviors to subordinates through exemplary behavior, encourages self-development of subordinates in this process, cultivates their advantages and influences their work attitude and behavior, enhances employees' confidence, hope and optimism in achieving goals, and resilience in facing problems and difficulties, and enhances employees' psychological capital. In return, employees will maintain a more positive work attitude, more firm will to work, and higher confidence to complete and achieve the goals of the organization, improve their own work performance. Therefore, this study proposes the following hypothesis:

Hypothesis 2-4: Individual psychological capital plays a mediating role between authentic leadership and individual performance.

3.3.2.3 The moderating role of organizational identification

The contingency theory of leadership points out that the result of the leader's behavior towards the team not only depends on the leader's behavior, but also needs to be systematically analyzed

in combination with the characteristics of the leader (i.e., the team) and the environment where the leader lives. Organizational identification refers to an individual's sense of identity or belonging to an organization and defining himself according to the organization to which he belongs. This identity includes individual cognition, evaluation and emotional identification. Based on this, we take organizational identification as the boundary condition to further explore the moderating effect of organizational identification on the influence of authentic leadership on individual performance through individual team psychological capital. Specifically, we believe that when the level of organizational identification is high, the positive effect of authentic leadership on individual psychological capital is strengthened, thus improving the positive effect on individual performance. When the level of organizational identification is low, the positive influence of authentic leadership on individual psychological capital will be inhibited, thus weakening the positive effect on individual performance.

When employees have a high level of organizational identification, they are cognitively and emotionally bonded with the organization, and expect their behavior to be consistent with the goals and expectations of the organization (Dutton et al., 1994; Karanika-Murray et al., 2015), because they regard organizational values, goals, and standards as a very important part of self-definition (Collins et al., 2019; H. L. Huang et al., 2022; H. J. Wang et al., 2017). Leaders are the main channels for employees to establish contact with the organization, and employees tend to regard their immediate superiors as representatives of the organization. Therefore, employees with high levels of organizational identification are more likely to respond positively to authentic leaders. Specifically, authentic leaders are self-conscious and share their views openly with employees and encourage them to share their views in the hope that employees will truly understand them. Employees with a high level of organizational identification are more inclined to recognize the public sharing of authentic leadership and believe that it is an effective measure for the organization to achieve its goals, so they are more willing to take the initiative to respond and trust the leader's behavior. At the same time, employees with a high level of organizational identification are more eager for the consistency between themselves and the organization (Karanika-Murray et al., 2015), so they will actively take authentic leadership as their model, so as to better promote their own self-understanding, and make positive adjustments to the goals based on their own abilities and standards. And then improve their own self-efficacy and positive mood. Similarly, authentic leadership advocates a transparent relationship with employees to promote the quality of communication between them (Walumbwa et al., 2008). Employees with a high level of organizational identification are also more inclined to support and support authentic leadership, which is more conducive to forming a close relationship with

their superiors. Leaders can also better understand the real situation of employees, and actively provide help and support, and finally encourage employees to have higher confidence in their work, and be more optimistic and hopeful to deal with various difficulties and challenges, and have more firm faith to make lasting efforts. In addition, authentic leadership has a high level of internalized moral perspective, and employees with higher organizational identification are more likely to attribute this characteristic of authentic leadership to the organization's emphasis on moral values (Ashforth et al., 2008; Mael & Ashforth, 1992), and then more willing to believe in real leaders, and take them as the standard, so that they more adhere to their own standards of behavior, reduce their own internal friction, more can promote their certainty to achieve their goals, improve their positive psychology and emotions. Finally, employees with a high level of organizational identification are more active in supporting the balanced information processing of authentic leadership, more confident that leaders will objectively make scientific management decisions based on factual information and their own opinions, more confident that their own suggestions and work values will be duly reflected, and improve their own self-efficacy and work motivation. And increase their own psychological capital.

On the contrary, when employees have a low level of organizational identification, their goals and work motivations are significantly different from those of the organization (Karanika-Murray et al., 2015), so it is difficult to obtain meaning from organizational work (H. J. Wang et al., 2017). Thus, employees pay more attention to their own interests and are more likely to take organizational deviant behaviors (Q. Y. Guo et al., 2020). Based on this, we believe that the positive influence of authentic leadership on employees with low organizational identification level will be weakened. To be specific, the public sharing behavior of authentic leaders for the purpose of self-awareness will be regarded by employees as a hypocritical behavior taken by leaders to satisfy their own needs or for the motivation of impression management, so that they are less likely to respond positively to leaders. Secondly, although authentic leaders try to maintain a transparent relationship with their subordinates, those employees with low organizational identification will still keep a certain psychological distance from the leader, rather than disclose all their views and ideas to the leader. In this case, it is difficult for leaders to fully understand these employees, and thus cannot provide effective help to them, so their cognitive and emotional help will be inhibited. In addition, authentic leaders try to make their behavioral decisions consistent with their own moral values and personal standards. However, for employees with low organizational identification level, they will also think that the leader takes the behavior for some other purposes, so it is difficult to take authentic leaders as their role models to improve their psychological capital. Finally, although authentic

leaders pursue to make fair decisions through objective data and information analysis, there is a gap between employees with low organizational recognition and the organization. Even if the leader gives the results of information processing from an objective and scientific perspective, employees may doubt the authenticity of these results. Therefore, we put forward the hypothesis:

Hypothesis 2-5: Organizational identification moderates the influence of authentic leadership and individual psychological capital, that is, the stronger organizational identification, the stronger the positive influence of authentic leadership on individual psychological capital.

Combining hypotheses 2-4 and 2-5, we believe that organizational identification will positively regulate the mediating role of individual psychological capital between authentic leadership and individual performance. When the level of organizational identification is high, employees are more inclined to internalize organizational goals and standards and strive to keep their own behaviors consistent with the organization. It is also believed that leaders will make reasonable behavioral decisions based on objective data and opinions, so as to improve employees' psychological capital. On the contrary, employees with a low level of organizational identification have certain differences with the values and goals of the organization, so they are more inclined to keep a distance from the organization and have a skeptical attitude. Therefore, although authentic leaders strive to be honest with them and expect positive feedback and opinions from these employees, low level organizational identification employees will selectively express some of their opinions, but not all of their wishes, out of self-interest. In addition, they are more likely to believe that some noble qualities shown by leaders are out of the need of work or other motives, rather than a sincere expression, which will weaken the positive impact of authentic leadership on individual psychological capital. Based on the above, this study proposes the following hypothesis:

Hypothesis 2-6: Organizational identification positively moderates the mediating effect of individual psychological capital between authentic leadership and individual performance, that is, the stronger organizational identification is, the more significant the mediating effect of individual psychological capital is.

The proposed hypotheses imply that employees who strongly identify with the organization are more likely to experience a heightened mediating effect of individual psychological capital. This aligns with the notion that a deep-seated organizational identification acts as an amplifying factor, enhancing the positive influence of psychological capital on individual performance under the guidance of authentic leadership. Consequently, these hypotheses set the stage for a nuanced investigation into the intricate interplay between authentic leadership, organizational

identification, psychological capital, and individual performance within the organizational context.

3.4 Summary

On the basis of reviewing the past and theories, combining social cognitive theory and the contingency theory of leadership, this chapter constructed Study 1 and Study 2, respectively discussing how and when functional leadership has an impact on team performance from the team level, and how and when authentic leadership has an impact on individual performance from the individual level. Specifically, study 1 focused on the team level and proposed that functional leadership had an indirect positive impact on team performance by improving team psychological capital, and functional leadership had a stronger indirect effect on team performance at a higher level of team cohesion. Study 2 focused on the individual level and proposed that authentic leadership had an indirect positive impact on individual performance through individual psychological capital, and authentic leadership had a stronger indirect effect on individual performance at a higher level of individual's organizational identification. This chapter puts forward a complete research model based on the theory, which provides a theoretical basis for the subsequent empirical research.

Drawing upon a thorough review of historical perspectives and theoretical frameworks, this chapter formulates a conceptual framework that intertwines social cognitive theory and the contingency theory of leadership. Within this framework, Study 1 and Study 2 are meticulously designed to elucidate the intricate mechanisms through which functional leadership influences team performance at the team level and how authentic leadership shapes individual performance at the individual level.

In the context of Study 1, the focal point is on the team level dynamics. It posits that functional leadership exerts an indirect yet positive impact on team performance, leveraging improvements in team psychological capital. Furthermore, the study suggests that this impact is more robust when team cohesion is elevated, emphasizing the contingent nature of functional leadership's influence on team performance.

Shifting the focus to Study 2, the examination zooms in on the individual level. Here, the proposal is that authentic leadership channels an indirect positive influence on individual performance, mediated through enhancements in individual psychological capital. Additionally, the study contends that this impact is heightened when there is a stronger sense of individual organizational identification, underscoring the contextual nuances that shape the influence of

authentic leadership on individual performance.

By presenting this detailed exploration, the chapter establishes a comprehensive research model grounded firmly in theoretical frameworks. This model serves as a robust foundation for subsequent empirical research endeavors. The envisioned empirical studies will not only validate the proposed theoretical relationships but also provide practical insights for application in diverse organizational contexts. Ultimately, this chapter contributes to the evolving discourse on leadership impact, offering a nuanced understanding that bridges theory and empirical exploration.

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Chapter 4: Research Method

This chapter mainly includes the source and collection process of research samples, variable measurement, analysis strategy, and basic principles of main data analysis methods.

4.1 Research sample and data collection

The data in this study were mainly collected from 7 enterprises in southwest China, including 2 real estate companies, 4 construction companies, and 1 consulting company. In order to reduce the common method bias, this study adopted the survey method of multi-time points and multi-data sources to collect data. Specifically, the researchers first contacted human resources executives at the companies they studied, who provided a list of the people they surveyed. Second, the researchers coded each questionnaire and distributed it to employees and their respective leaders. At the beginning of each questionnaire, the researcher explained the purpose, form and process of the research to the respondents, and emphasized the anonymity and data confidentiality of the survey. The questionnaire survey was conducted at 2 time points, with an interval of 1 month.

In the first wave, employees evaluated functional leadership, authentic leadership, team cohesion, and organizational identification, and provided basic information about themselves, including gender, age, education level, and organizational tenure. We sent the questionnaire to 650 employees from 170 teams and received 586 responses from 153 teams. In the second wave, employees evaluate team psychological capital and individual psychological capital, while their direct superiors evaluate team performance and individual performance of employees and provide basic information about themselves. We sent the questionnaire to those 586 employees and 153 team leaders, and received responses from 512 employees and 142 team leaders. After pairing and eliminating invalid samples, the effective date of 478 employees and 138 leaders from 138 teams were finally recovered in this study, and the overall response rates of employees and leaders were 73.54% and 81.18%, respectively. The descriptive characteristics of specific samples are shown in Table 4.1.

Among the finally obtained employee samples, 56.30% are male employees ($SD = .50$), the average age of employees is 32.36 years old ($SD = 6.95$), the average organizational tenure is 5.34 years ($SD = 4.49$), and 56.90% of employees have bachelor's degree or above. In the final

sample of leaders obtained, 63.77% were male employees ($SD = .48$), the average age of leaders was 38.08 years old ($SD = 4.81$), the average organizational tenure was 8.97 years ($SD = 3.89$), and 86.96% of leaders had bachelor's degree or above.

Table 4.1 Descriptive characteristics of samples

| Enterprises' information | | Individual ratio | Team ratio |
|--------------------------|------------------------------|------------------|------------|
| SY real estate company | | 14.44% | 13.77% |
| YD real estate company | | 14.44% | 14.49% |
| WY Group | | 14.64% | 15.22% |
| SJ construction company | | 16.53% | 16.67% |
| WJ construction company | | 10.67% | 10.87% |
| YJ construction company | | 15.27% | 15.22% |
| ZC consulting company | | 14.02% | 13.77% |
| Leaders' information | | Ratio | |
| Age | 30 years old and below | .72% | |
| | 31-40 years old | 72.46% | |
| | 41-50 years old | 25.36% | |
| | 50 years old and above | 1.45% | |
| Gender | Male | 63.77% | |
| | Female | 36.23% | |
| Education level | High school diploma or below | .00% | |
| | College diploma | 13.04% | |
| | A bachelor's degree | 69.57% | |
| | A master's degree or above | 17.39% | |
| Employees' information | | Ratio | |
| Age | 30 years old and below | 46.23% | |
| | 31-40 years old | 43.72% | |
| | 41-50 years old | 8.79% | |
| | 50 years old and above | 1.26% | |
| Gender | Male | 56.28% | |
| | Female | 43.72% | |
| Education level | High school diploma or below | 14.64% | |
| | College diploma | 28.45% | |
| | A bachelor's degree | 42.89% | |
| | A master's degree or above | 14.02% | |

Note: $N_{individual} = 478$, $N_{team} = 138$.

4.2 Measures

The measurement scales adopted in this study are mature foreign measurement scales, which have good reliability and validity, and are widely used. In order to ensure the accuracy of the scale, all items were translated into Chinese following the translation-back-translation procedures and were measured with a six-point scale, from 1 (strongly disagree) to 6 (strongly agree).

4.2.1 The measures of Study 1

4.2.1.1 Functional leadership

Functional leadership was evaluated with the 13-item scale developed by J. P. Santos et al. (2015), as shown in Table 4.2. Sample items were: “My supervisor defined correctly the team’s task”, “My supervisor encouraged the team members to suggest strategies for solving the problem”, and “My supervisor monitored the team’s execution of the task, keeping the team informed about its performance”. The Cronbach’s alpha was .99.

Table 4.2 Functional leadership scale

| Number | Items |
|--------|--|
| 1 | My supervisor defined correctly the team's task. |
| 2 | My supervisor explained the purpose of the team's task. |
| 3 | My supervisor informed and discussed with the team members what means were available for the execution of the team's task. |
| 4 | My supervisor promoted a verbal discussion to ensure that all the team members understood what the team's task was. |
| 5 | My supervisor presented a strategy for solving the problem. |
| 6 | My supervisor encouraged the team members to suggest strategies for solving the problem. |
| 7 | My supervisor promoted the elaboration of a team plan. |
| 8 | My supervisor stimulated the clarification of roles and responsibilities within the team. |
| 9 | My supervisor promoted a verbal discussion to ensure that all the team members understood the plan and their respective roles. |
| 10 | My supervisor coordinated team members during task execution. |
| 11 | My supervisor monitored the team's execution of the task, keeping the team informed about its performance. |
| 12 | My supervisor stimulated mutual support and assistance within the team for members having difficulties. |
| 13 | My supervisor stimulated the team to achieve its goal while restraining possible team conflicts. |

4.2.1.2 Team cohesion

Team cohesion was evaluated with the 6-item scale of Mathieu et al. (2015), as shown in Table 4.3. Sample items were: "There is feeling of unity and cohesion in my team" and "Members of my team share a focus on our work". The Cronbach’s alpha was .94.

Table 4.3 Team cohesion scale

| Number | Items |
|--------|---|
| 1 | There is feeling of unity and cohesion in my team. |
| 2 | There is a strong sense of belongingness among my team members. |
| 3 | Members of my team feel close to each other. |
| 4 | Members of my team share a focus on our work. |
| 5 | My team concentrates on getting things done. |
| 6 | My team members pull together to accomplish work. |

4.2.1.3 Team psychological capital

Team psychological capital was evaluated with the 12-item scale developed by Lorenz et al. (2016), as shown in Table 4.4. Sample items were: "We, as a team, are confident that we can handle unexpected events efficiently", "Right now, we are a successful team", "Sometimes we 'force' ourselves to do things, whether we want to or not" and "We, as a team, look forward to the life ahead of us". The Cronbach's alpha was .97.

Table 4.4 Team psychological capital scale

| Number | Items |
|--------|---|
| 1 | If my team finds itself in a difficult situation, we can think of various ways to get out of it. |
| 2 | Right now, we are a successful team. |
| 3 | We were able to think of many ways to achieve our team goals. |
| 4 | We, as a team, look forward to the life ahead of us. |
| 5 | The future holds many good things for my team. |
| 6 | Overall, I hope that more good things happen to us than bad. |
| 7 | Sometimes we "force" ourselves to do things, whether we want to or not. |
| 8 | When we are in a difficult situation, we usually manage to find a solution. |
| 9 | It doesn't bother us if there are people who don't like us. |
| 10 | We, as a team, are confident that we can handle unexpected events efficiently. |
| 11 | We, as a team, can solve most problems if we invest the necessary effort. |
| 12 | We, as a team, have managed to stay calm when facing difficulties, because we trust in our abilities to deal with problems. |

4.2.1.4 Team performance

Team performance was evaluated with the 3-item scale of Lam et al. (2004), as shown in Table 4.5. The sample item was "My team is very competent". The Cronbach's alpha was .65.

Table 4.5 Team performance scale

| Number | Items |
|--------|--|
| 1 | My team is very competent. |
| 2 | My team gets its work done very effectively. |
| 3 | My team has performed its job well. |

4.2.1.5 Control variables

We selected the leader's age, gender, organizational tenure, education level, and team working tenure with the leader as control variables following previous studies (Leroy et al., 2015; J. Mao et al., 2019). Age, organizational tenure, and team working tenure with the leader was recorded in years with open-ended questions. Gender was dichotomized as male (score of 0) and female (score of 1). Education level was divided into four levels (1 = high school diploma or below, 2 = college diploma, 3 = a bachelor's degree, 4 = a master's degree or above).

4.2.2 The measures of Study 2

4.2.2.1 Authentic leadership

Authentic leadership was evaluated with the 14-item scale of Neider and Schriesheim (2011), as shown in Table 4.6. Sample items were: "My supervisor describes accurately the way that others view his/her abilities", "My supervisor clearly states what he/she means", "My supervisor shows consistency between his/her beliefs and actions", and "My supervisor asks for ideas that challenge his/her core beliefs". The Cronbach's alpha was .98.

Table 4.6 Authentic leadership scale

| Number | Items |
|--------|---|
| 1 | My supervisor describes accurately the way that others view his/her abilities. |
| 2 | My supervisor shows that he/she understands his/her strengths and weaknesses. |
| 3 | My supervisor clearly aware of the impact he/she has on others. |
| 4 | My supervisor clearly states what he/she means. |
| 5 | My supervisor openly shares information with others. |
| 6 | My supervisor expresses his/her ideas and thoughts clearly to others. |
| 7 | My supervisor shows consistency between his/her beliefs and actions. |
| 8 | My supervisor uses his/her core beliefs to make decisions. |
| 9 | My supervisor resists pressures on him/her to do things contrary to his/her beliefs. |
| 10 | My supervisor is guided in his/her actions by internal moral standards. |
| 11 | My supervisor asks for ideas that challenge his/her core beliefs. |
| 12 | My supervisor carefully listens to alternative perspectives before reaching a conclusion. |
| 13 | My supervisor objectively analyzes relevant data before making a decision. |
| 14 | My supervisor encourages others to voice opposing points of view. |

4.2.2.2 Organizational identification

Organizational identification was evaluated with the 6-item scale of Mael and Ashforth (1992), as shown in Table 4.7. Sample items were: "When someone criticizes my organization, it feels like a personal insult" and "I am very interested in what others think about my organization ". The Cronbach's alpha was .78.

Table 4.7 Organizational identification scale

| Number | Items |
|--------|---|
| 1 | When someone criticizes my organization, it feels like a personal insult. |
| 2 | I am very interested in what others think about my organization. |
| 3 | When I talk about my organization, I usually say 'we' rather than 'they'. |
| 4 | My organization's successes are my successes. |
| 5 | When someone praises my organization, it feels like a personal compliment. |
| 6 | If a story in the media criticized my organization, I would feel embarrassed. |

4.2.2.3 Individual psychological capital

Individual psychological capital was evaluated with the 6-item scale of Lorenz et al. (2016), as shown in Table 4.8. The scale includes four dimensions: self-efficacy, hope, resilience, and optimism. Sample items were: "I am confident that I could deal efficiently with unexpected

events", "Right now, I see myself as being pretty successful", "Sometimes I make myself do things whether I want to or not", and "I am looking forward to the life ahead of me". The Cronbach's alpha was .88.

Table 4.8 Individual psychological capital scale

| Number | Items |
|--------|---|
| 1 | If I should find myself in a jam, I could think of many ways to get out of it. |
| 2 | Right now, I see myself as being pretty successful. |
| 3 | I can think of many ways to reach my current goals. |
| 4 | I am looking forward to the life ahead of me. |
| 5 | The future holds a lot of good in store for me. |
| 6 | Overall, I expect more good things to happen to me than bad. |
| 7 | Sometimes I make myself do things whether I want to or not. |
| 8 | When I'm in a difficult situation, I can usually find my way out of it. |
| 9 | It's okay if there are people who don't like me. |
| 10 | I am confident that I could deal efficiently with unexpected events. |
| 11 | I can solve most problems if I invest the necessary effort. |
| 12 | I can remain calm when facing difficulties because I can rely on my coping abilities. |

4.2.2.4 Individual performance

Individual performance was evaluated with the 8-item scale of Williams and Anderson (1991), as shown in Table 4.9. Sample items were "I adequately complete assigned duties" and "I fulfill responsibilities specified in job description". The Cronbach's alpha was .89.

Table 4.9 Individual performance scale

| Number | Items |
|--------|---|
| 1 | I adequately complete assigned duties. |
| 2 | I fulfill responsibilities specified in job description. |
| 3 | I perform tasks that are expected of him/her. |
| 4 | I meet formal performance requirements of the job. |
| 5 | I engage in activities that will directly affect my performance evaluation. |
| 6 | I concern aspects of the job I am obligated to perform. |
| 7 | I perform essential duties. |
| 8 | I help others who have been absent. |

4.2.2.5 Control variables

We selected the employee's age, gender, organizational tenure, and education level as control variables following previous studies (Leroy et al., 2012; J. Mao et al., 2019). Age, and organizational tenure was recorded in years with open-ended questions. Gender was dichotomized as male (score of 0) and female (score of 1). Education level was divided into four levels (1 = high school diploma or below, 2 = college diploma, 3 = a bachelor's degree, 4 = a master's degree or above).

4.3 Analysis strategy

4.3.1 Analysis strategy of Study 1

This study mainly examined the effect of functional leadership on team performance through team psychological capital and the moderating effect of team cohesion. To judge whether the data at the individual level can be aggregated to the team level, this study first used Rwg, ICC(1), ICC(2) and other indicators to test the consistency of these variables, since functional leadership, team cohesion, and team psychological capital were evaluated by employees. Secondly, Mplus 8.0 software was used in this study to test the discriminative validity of all major variables through confirmatory factor analysis. In addition, SPSS 22.0 was used in this study to conduct a descriptive analysis of the mean value, standard deviation, and correlation of samples, which provided the basis for subsequent empirical analysis. Finally, the PROCESS plug-in of SPSS 22.0 was used in this study to test each hypothesis of the study. Specifically, this study first examined the mediating role of team psychological capital between functional leadership and team performance without including team cohesion. To test the mediation hypotheses, we evaluated the indirect effect and 95% biased-corrected confidence intervals using bootstrapping analysis with 10,000 bootstrap samples (Preacher & Hayes, 2008). If the confidence interval does not contain 0, the mediation effect is significant. Then, we included team cohesion and interaction items (i.e., functional leadership \times team cohesion) into the model, and constructed a new moderating model to test the moderating effect of team cohesion on the relationship between functional leadership and team psychological capital. We reduced multicollinearity by centralizing all variables used in creating the interaction terms.

4.3.2 Analysis strategy of Study 2

This study mainly examined the influence of authentic leadership on individual performance through individual psychological capital and the moderating effect of organizational identification. Similar to Study 1, this study first used Mplus to perform confirmatory factor analysis for all major variables. Secondly, SPSS 22.0 was used in this study to conduct descriptive statistics on mean, standard deviation, and correlation of samples. Finally, the PROCESS plug-in of SPSS 22.0 was used to test all hypotheses of the study. As for the mediation effect test, this study constructed a main effect model excluding organizational identification to test the mediating effect of individual psychological capital on the relationship between authentic leadership and individual performance. To test the indirect effects, we

evaluated the 95% biased-corrected confidence intervals using bootstrapping analysis with 10,000 bootstrap samples. To test the moderating effect, this study added organizational identification and interaction terms (i.e., authentic leadership \times organizational identification) on the basis of the main effect model to test the moderating effect of organizational identification on the relationship between authentic leadership and individual psychological capital. Similarly, we centralized all variables used in creating the interaction terms.

4.3.3 Main analysis methods

4.3.3.1 Reliability analysis

Reliability refers to the reliability of test results, including the consistency, reproducibility, and stability of the results. Reliability coefficient is a very important index to measure the quality of the test method. In the field of organizational behavior, scale is usually used as the main tool to measure variables. It is composed of a set of test questions, each of which meets the standard requirements, so it is necessary to consider the influence caused by random errors. The greater the random error of the measurement, the lower the reliability of the measurement.

Reliability can be divided into intrinsic reliability and extrinsic reliability. Intrinsic reliability refers to whether a set of questions in the scale (or the scale as a whole) measure the same concept, that is, how internally consistent these questions are. The most commonly used intrinsic reliability coefficients mainly include Cronbach's alpha coefficient and split-half reliability.

(1) Cronbach's alpha coefficient. The Cronbach's alpha coefficient is the most commonly used reliability coefficient at present, which indicates the consistency between the scores of each item in the scale. This method is applicable to the measurement data of item multiple integration or the questionnaire data. The Cronbach's alpha coefficient can be used to explain the score difference of a certain trait and analyze how much is determined by the true score, so as to reflect the extent of the scale affected by random error. In general, when the Cronbach's alpha coefficient does not exceed 0.6, the internal consistency of the scale is considered to be insufficient. When the Cronbach's alpha coefficient is between 0.7 and 0.8, it means that the scale has relatively appropriate reliability, and reaching 0.8 or above means that the scale has very good reliability. The specific formula is: $\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k S_i^2}{S_x^2} \right)$, among them, the k is the number of the test, the S_i is the variance of the score for question i, and S_x is the variance of the test score.

(2) Split-half reliability. Split-half reliability means that only a portion of all items are

sampled in any test. If different parts are extracted, many parallel equivalent tests can be compiled, which is called duplicate. If there are more than two copies of a test method, the correlation coefficient is calculated according to the scores of multiple copies accepted by the corresponding subjects, that is, the duplicate reliability is obtained. The formula is $r_{xx} = \frac{2r_{hh}}{1+r_{hh}}$.

Where r_{hh} refers to the correlation coefficient of half test scores, and r_{xx} is the reliability estimate of the whole test.

Extrinsic reliability refers to the degree of consistency of scale results when measured at different times. The most commonly used extrinsic reliability index is retest reliability, which means that the same questionnaire is repeated on the same object at different times to calculate the degree of consistency of these test results.

In this study, the most commonly used Cronbach's alpha coefficient was used to test the reliability.

4.3.3.2 Validity analysis

Validity mainly refers to the degree of accuracy of measurement tools. The validity can be divided into convergent validity and discriminant validity. Convergent validity refers to the use of different measures by which the degree of similarity of the same variable can be measured together. Discriminant validity mainly refers to whether the items corresponding to different variables have obvious discriminability before. At present, the measurement of validity is mainly tested by the way of factor analysis. Factor analysis is a statistical method used to explain the correlation between explicit variables. The main purpose is to explain the correlation between indicators and simplify the data. Factor analysis can be divided into exploratory factor analysis and confirmatory factor analysis.

(1) Exploratory factor analysis. Exploratory factor analysis is a method commonly used when the theoretical structure of the scale is uncertain to determine the number of factors, the relationship between indicators and factors, and the relationship between factors. The most commonly used exploratory factor analysis method is the main component analysis. Principal component analysis is to interpret as much information as possible about the original variable (i.e., maximize variation) by applying a linear equation composed of a set of variables, and thus extract the common factor which is the cause of index covariation. Using these common factors could explain the reasons for the correlation between various indicators.

(2) Confirmatory factor analysis. Confirmatory factor analysis is an important part of structural equation model, which is mainly used to deal with the relationship between observed

index and latent variable. Different from exploratory factor analysis, confirmatory factor analysis has already determined the membership relationship between the observed index and the potential factor before the analysis, and uses each model fitting index to determine whether different variables have good convergence validity and discriminative validity. The main indicators include Chi-square value, comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA) and standardized residual mean root (SRMR). The Chi-square value mainly represents the degree of deviation between the actual measured value and the theoretical value. The comparative fit index represents the degree of improvement of the research model relative to the benchmark model (that is, the variables are not correlated and independent). The Tucker-Lewis index represents the improvement of the research model compared with the independent model with the worst fitting. The root mean square error of approximation also represents whether the model fits the scale index, which is less affected by the sample size and more sensitive to model error. The standardized residual mean root is based on the size of residual error to determine the fitting of the research model. In general, the values of the comparative fit index and the Tucker-Lewis index need to be greater than 0.9, while the values of the root mean square error of approximation and the standardized residual mean root need to be less than 0.05.

The scales used in this study are all internationally authoritative and widely used scales, so these scales have a good theoretical basis. Therefore, we mainly use confirmatory factor analysis to test the validity of each research variable and the validity of the research model.

4.3.3.3 Mediating effect test

Mediating effect refers to the mediating role of variable between independent variable and dependent variable, that is, whether mediating variable establishes the connection between independent variable and dependent variable. Specifically, the independent variable causes the change of the mediating variable, which in turn causes the change of the dependent variable. At present, the testing methods of mediating effect mainly include the following:

(1) Causal steps approach. The specific operations are: 1. Test whether there is a significant relationship between the independent variable and the dependent variable; 2. Test whether the independent variable has a significant influence on the mediating variable; 3. Test whether the influence of mediating variable on dependent variable is significant; 4. the Test the direct effect when the independent variable has a significant influence on the mediating variable and the mediating variable has a significant influence on the dependent variable. In this case, if the direct effect is not significant, it is a complete mediation effect. Otherwise, it is a partial

mediation effect.

(2) Product of coefficients approach. It is also known as Sobel test, which is to test whether the product of the influence coefficient of independent variable on intermediary variable and the influence coefficient of intermediary variable on dependent variable is significant.

(3) Difference coefficient test. The difference between the direct influence coefficient without mediating variable and the direct influence coefficient with mediating variable is used as the index to test the mediating effect.

(4) The Bootstrap method. The principle of Bootstrap method is that when the hypothesis of normal distribution is not established, the empirical sampling distribution is used as the actual overall distribution for parameter estimation. In other words, the research sample is taken as the sampling population, and a certain number of samples are repeatedly selected by the way of sampling back, and finally the evaluation and results are taken.

In this study, the Bootstrap method emerged as a pivotal tool for rigorously examining the mediation effects within the proposed theoretical model. The application of the Bootstrap method involves a series of resampling techniques and statistical analyses that are instrumental in estimating the distribution of indirect effects, thereby providing a robust assessment of the mediation pathways.

To delve into more detail, the Bootstrap method involves repeatedly drawing random samples with replacement from the original dataset. For each of these resampled datasets, the mediation analysis is conducted, resulting in a distribution of indirect effects. This resampling process is typically iterated thousands of times to generate a stable and reliable estimation of the indirect effects' distribution.

The advantage of the Bootstrap method lies in its ability to address issues related to sampling variability, making it particularly well-suited for studies with relatively small sample sizes. By assessing the indirect effects through multiple iterations, it enhances the precision and reliability of the mediation analysis, providing more accurate confidence intervals and facilitating a robust interpretation of the study's findings.

In summary, the use of the Bootstrap method in this study underscores a meticulous approach to testing the mediation effects within the theoretical framework. Its application contributes to the methodological rigor of the research, ensuring a comprehensive and trustworthy evaluation of the hypothesized relationships and enhancing the validity of the study's conclusions.

4.3.3.4 Moderating effect test

The moderating effect refers to whether the direction and magnitude of the relationship between two variables depends on the third variable. When the relationship changes with the third variable, an effect is considered to exist. At present, the test of moderating effect is mainly conducted by establishing interaction terms between independent variables and moderating variables, which is consistent with the test of interaction effect. However, moderating effects are not the same as interaction effects. When testing the interaction effects, the status of the two independent variables is not fixed, and any variable can be used as the regulating variable. When testing the moderating effects, independent variables and moderating variables are clearly distinguished.

4.4 Summary

This chapter is mainly based on the theoretical model of Study 1 and Study 2 to clarify the research design and methods. First of all, the source and collection process of the research samples were determined in this study to ensure the effectiveness of the research objects and data collection process, and a preliminary descriptive analysis was conducted on the final collected research samples to ensure the representativeness of the collected samples. Secondly, aiming at the main research variables in Study 1 and Study 2, this study determines the measurement scales and acquisition sources of each variable, so as to ensure the effectiveness and authority of measurement tools. In addition, based on the basic characteristics of data acquisition and the theoretical models of Study 1 and Study 2, this chapter provides specific analysis strategies for each study, and clearly explains the analysis steps and methods of each study. In addition, this chapter also makes a specific explanation of the analysis principles of each research method, further clarifying the scientific nature and rationality of the core analysis methods. This chapter proposes the corresponding research design according to the theoretical model, which provides the basis for the subsequent data analysis and research hypotheses.

This chapter is intricately woven around the theoretical frameworks elucidated in Study 1 and Study 2, meticulously outlining the research design and methodologies employed in this comprehensive exploration. The initial focus centers on ensuring the robustness of the research by detailing the determination of research sample sources and the formulation of a rigorous collection process. This meticulous planning is pivotal for securing the effectiveness of both the chosen research objects and the subsequent data collection procedures. To further validate

the collected samples, a preliminary descriptive analysis is conducted, scrutinizing the characteristics to ensure they are representative of the intended population.

Progressing in a systematic manner, the study shifts its attention to the principal research variables identified in Study 1 and Study 2. Here, the endeavor is to establish the reliability and authority of the research tools by specifying measurement scales and pinpointing sources for each variable. This methodical approach ensures that the measurement tools are not only effective but also aligned with the theoretical underpinnings of the study.

Considering the inherent characteristics of data acquisition and the theoretical models guiding Study 1 and Study 2, this chapter provides a detailed exposition of specific analysis strategies for each study. The clarity extends to explicating the intricacies of the analytical steps and methods employed in each study, fostering transparency and comprehensibility in the research process.

Moreover, the chapter delves into an exhaustive explanation of the principles underpinning each research method, thereby reinforcing the scientific nature and rationality of the core analysis methods. This comprehensive understanding aids in establishing the credibility of the analytical approaches employed in the research.

The proposed research design is meticulously aligned with the theoretical models, serving as the bedrock for subsequent data analysis and the formulation of research hypotheses. This methodological thoroughness not only underscores the scientific rigor applied in the research but also lays the groundwork for extracting meaningful insights from the collected data, contributing substantively to the overall body of knowledge in the field.

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Chapter 5: Research Results

This chapter mainly describes the data analysis results of Study 1 and Study 2, including reliability and validity analysis, descriptive statistics and correlation analysis, and hypothesis testing of the model.

5.1 Results of Study 1

5.1.1 Integration verification of team data

Before conducting formal data analysis, it is necessary to integrate individual level data into team level data. This study used indicators such as ICC(1), ICC(2), and Rwg to test the consistency of functional leadership, team psychological capital, and team cohesion at the individual level. The results in Table 5.1 show that the ICC(1), ICC(2), and Rwg of functional leadership, team psychological capital, and team cohesion are within acceptable ranges ($ICC(1) > .05$, $ICC(2) > .5$, and $Rwg > 0.7$), indicating that integrating individual level data into the team level is reasonable. This study calculated the average value of individual level functional leadership, team psychological capital, and team cohesion for each team, which is used as the data for the team for subsequent analysis. Since team performance was evaluated by the leaders of each team, there was no need to aggregate team performance and calculate ICC(1), ICC(2), and Rwg.

Table 5.1 Aggregate analysis of individual data at the team level

| Variables | ICC(1) | ICC(2) | Rwg |
|----------------------------|--------|--------|-----|
| Functional leadership | .62 | .88 | .98 |
| Team psychological capital | .46 | .79 | .98 |
| Team cohesion | .64 | .89 | .96 |
| Team performance | - | - | - |

Notes: $N_{individual} = 478$, $N_{team} = 138$; Since team performance was evaluated by the leaders of each team, there was no need to aggregate team performance and calculate ICC(1), ICC(2), and Rwg.

5.1.2 Reliability and validity analysis

This study first tested the reliability and structural validity of each variable, and the results were shown in Table 5.2. In terms of reliability, functional leadership ($Cronbach\ \alpha = .99$), team psychological capital ($Cronbach\ \alpha = .97$), team cohesion ($Cronbach\ \alpha = .94$) and team performance ($Cronbach\ \alpha = .65$) were all greater than .65. Therefore, all study variables have

good reliability. In addition, in terms of structural validity, functional leadership ($\chi^2(65) = 92.05$, CFI = .99, TLI = .99, RMSEA = 0.06, SRMR = .01), team psychological capital ($\chi^2(54) = 82.60$, CFI = .98, TLI = .98, RMSEA = .06, SRMR = .02) and team cohesion ($\chi^2(9) = 44.15$, CFI = .95, TLI = .92, RMSEA = .17, SRMR = .03) had good structural validity. Team performance was measured by three items, and the model structure was saturated model, so the fitting indexes of this variable reached the optimal results ($\chi^2(0) = .00$, CFI = 1.00, TLI = 1.00, RMSEA = .00, SRMR = .00). In conclusion, all study variables in this study have good structural validity.

Table 5.2 Reliability and structure validity of main variables at the team level

| Variables | Cronbach α | χ^2 | d.f. | $\chi^2/d.f.$ | RMSEA | SRMR | CFI | TLI |
|----------------------------|-------------------|----------|------|---------------|-------|------|------|------|
| Functional leadership | .99 | 92.05 | 65 | 1.42 | .06 | .01 | .99 | .99 |
| Team psychological capital | .97 | 82.60 | 54 | 1.53 | .06 | .02 | .98 | .98 |
| Team cohesion | .94 | 44.15 | 9 | 4.91 | .17 | .03 | .95 | .92 |
| Team performance | .65 | 0.00 | 0 | 0.00 | .00 | .00 | 1.00 | 1.00 |

Notes: $n = 138$; * $p < .05$; ** $p < .01$; *** $p < .001$; χ^2 : chi-squared value, d.f.: degree of freedom, RMSEA: root mean square error of approximation, CFI: comparative fix index, TLI: tucker-lewis index, SRMR: standardized root mean squared residual.

In addition, confirmatory factor analysis was used to test the discriminative validity between variables. Specifically, the basic model was constructed and several alternative models were introduced in this study. The results were shown in Table 5.3. Among them, Model 1 is the baseline model (four-factor model), including functional leadership, team psychological capital, team cohesion and team performance. Model 2 is a three-factor model, that is, team psychological capital and team cohesion were combined into one factor. Model 3 is a two-factor model, that is, functional leadership, team psychological capital and team cohesion were combined into one factor. Model 4 is a single-factor model, that is, all variables were combined into one factor. The results of confirmatory factor analysis showed that Model 1 had the best model fitting ($\chi^2(521) = 732.53$, CFI = .96, TLI = .96, RMSEA = .05, SRMR = 0.04), which was better than the three-factor Model (Model 2, $\chi^2(524) = 1337.93$, CFI = .85, TLI = .84, RMSEA = .11, SRMR = .11), two-factor model (Model 3, $\chi^2(526) = 2795.09$, CFI = .59, TLI = .56, RMSEA = .18, SRMR = .21) and one-factor Model (Model 4, $\chi^2(527) = 2819.70$, CFI = .59, TLI = .56, RMSEA = .18, SRMR = .21). These results indicated that the main variables in this study had good discriminative validity.

Table 5.3 Confirmatory factor analysis comparing alternative model at the team level

| Models | χ^2 | d.f. | $\chi^2/d.f.$ | RMSEA | SRMR | CFI | TLI | $\Delta\chi^2(d.f.)$ |
|------------------------------------|----------|------|---------------|-------|------|-----|-----|----------------------|
| Model 1 | | | | | | | | |
| Four-factor model: FL, TPC, TC, TP | 732.53 | 521 | 1.41 | .05 | .04 | .96 | .96 | — |
| Model 2 | | | | | | | | |
| Three-factor model: FL, TPC+TC, TP | 1337.93 | 524 | 2.55 | .11 | .11 | .85 | .84 | 605.40*** (3) |

| | | | | | | | | | |
|-----------------------------|---------|-----|------|------|-----|-----|-----|------------|-----|
| (combining TPC and TC) | | | | | | | | | |
| Model 3 | | | | | | | | | |
| Two-factor model: | | | | | | | | | |
| FL+TPC+TC, TP | 2795.09 | 526 | 5.31 | 0.18 | .21 | .59 | .56 | 2062.56*** | (5) |
| (combining FL, TPC, and TC) | | | | | | | | | |
| Model 4 | | | | | | | | | |
| One-factor model: | | | | | | | | | |
| FL+TPC+TC+TP | 2819.70 | 527 | 5.35 | .18 | .21 | .59 | .56 | 2087.17*** | (6) |
| (combining all variables) | | | | | | | | | |

Notes: $n = 138$; * $p < .05$; ** $p < .01$; *** $p < .001$; χ^2 : chi-squared value, $d.f.$: degree of freedom, RMSEA: root mean square error of approximation, CFI: comparative fix index, TLI: tucker-lewis index, SRMR: standardized root mean squared residual; FL: functional leadership, TPC: team psychological capital, TC: team cohesion, TP: team performance.

5.1.3 Assessment of common method bias

Although this study adopted a multi-data source and multi-time point data collection method, and functional leadership, team psychological capital, and team cohesion were all reported by team members, there was a potential common method bias. In order to reduce the influence of common method bias on research results, this study first constructed a benchmark model with functional leadership, team psychological capital and team cohesion as the main variables, and then added common method factors on this basis to build a new alternative model (Podsakoff et al., 2003). The results showed that the model fit improved with the addition of common method factor (Model without common method factor, $\chi^2(431) = 606.37$, CFI = .97, TLI = .97, RMSEA = .05, SRMR = .04; Model including common method factor, $\chi^2(431) = 545.44$, CFI = .97, TLI = .97, RMSEA = .05, SRMR = .04), but the variance accounted for by the common method factor was 10% and did not exceed 25% (Williams et al., 1989). There was no significant change in each fitting index ($\Delta CFI = .007$, $\Delta TLI = .004$, $\Delta RMSEA = .003$, $\Delta SRMR = .001$) (Y. P. Gong et al., 2022), so our results were not significantly affected by the common method bias.

5.1.4 Descriptive statistics and correlations

In this study, SPSS 22.0 software was used to conduct descriptive statistics and correlation analysis for all variables, and the analysis results were shown in Table 5.4.

Table 5.4 Descriptive statistics and correlations at the team level

| | Mean | S.D. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--|-------|------|------|--------|--------|---|---|---|---|---|
| 1. Superior's gender | .36 | .48 | | | | | | | | |
| 2. Superior's age | 38.08 | 4.81 | -.15 | | | | | | | |
| 3. Superior's organizational tenure | 8.97 | 3.89 | .07 | .51*** | | | | | | |
| 4. Superior's working tenure with team | 5.43 | 3.11 | .02 | .51*** | .72*** | | | | | |

| | | | | | | | | | | |
|-------------------------------|------|-----|------|---------|------|-----|------|--------|--------|-------|
| 5. Superior's education level | 3.04 | .55 | .11 | -.30*** | -.09 | .06 | | | | |
| 6. Functional leadership | 4.92 | .72 | .12 | .08 | -.02 | .08 | .02 | | | |
| 7. Team psychological capital | 4.96 | .58 | .08 | .11 | .09 | .07 | -.13 | .51*** | | |
| 8. Team cohesion | 4.97 | .71 | -.09 | .07 | .16 | .17 | -.05 | .07 | .33*** | |
| 9. Team performance | 5.04 | .47 | -.03 | .01 | .02 | .01 | .13 | .52*** | .47*** | .27** |

Notes: $n = 138$; * $p < .05$; ** $p < .01$; *** $p < .001$; Gender: 0 = male; 1 = female. Education level: 1 = senior high school or below, 2 = college degree, 3 = bachelor's degree, 4 = master's degree or above.

Functional leadership had a significant positive correlation with team psychological capital ($r = .51, p < .001$), functional leadership had a significant positive correlation with team performance ($r = .52, p < .001$), and team psychological capital had a significant positive correlation with team performance ($r = .47, p < .001$). These conclusions provided preliminary support for the hypotheses of direct effects and mediating effects.

5.1.5 Hypotheses testing

This study mainly examined the impact of functional leadership on team performance, the mediating role of team psychological capital, and the moderating role of team cohesion.

5.1.5.1 The impact of functional leadership on team performance

Hypothesis 1-1 suggested that functional leadership had a positive impact on team performance, and the results were shown in Table 5.5. The results showed that functional leadership was positively correlated with team performance ($b = .26, s.e. = .05, p < .001$), thus hypothesis 1-1 was supported.

5.1.5.2 The mediating effect of team psychological capital

Hypothesis 1-2 proposed that functional leadership had a positive impact on team psychological capital, while hypothesis 1-3 proposed that team psychological capital had a positive impact on team performance. Table 5.5 presented the results of hypothesis 1-2 and 1-3. The results showed that functional leadership was positively correlated with team psychological capital ($b = .42, s.e. = .06, p < .001$), and team psychological capital was positively correlated with team performance ($b = .25, s.e. = .07, p < .001$). Therefore, hypothesis 1-2 and 1-3 were supported. In addition, hypothesis 1-4 indicated that team psychological capital mediated the relationship between functional leadership and team performance. Table 5.5 also presented the results of the mediation effect test. The results showed that the indirect effect of team psychological capital on the relationship between functional leadership and team performance was significant (*Indirect effect* = .10, $s.e. = .04, 95\%CI = [.04, .17]$), thus hypothesis 1-4 were supported.

Table 5.5 Results of main path model test at the team level

| Variables | Team psychological capital | | Team performance | |
|--|----------------------------|-------------|------------------|-------------|
| | <i>Coeff.</i> | <i>s.e.</i> | <i>Coeff.</i> | <i>s.e.</i> |
| <i>CV</i> | | | | |
| Superior's gender | .03 | .09 | -.12 | .07 |
| Superior's age | .00 | .01 | -.00 | .01 |
| Superior's organizational tenure | .02 | .02 | .01 | .01 |
| Superior's working tenure with team | -.01 | .02 | -.02 | .02 |
| Superior's education level | -.14 | .08 | .16* | .07 |
| <i>IV</i> | | | | |
| Functional leadership | .42*** | .06 | .26*** | .05 |
| <i>Mediator</i> | | | | |
| Team psychological capital | | | .25*** | .07 |
| <i>R</i> ² | .29 | | .37 | |
| Indirect effects test | | | | |
| Path | Indirect Effect | | <i>s.e.</i> | 95% CI |
| Functional leadership →Team psychological capital →Team performance | .10 | | .04 | [.04, .17] |

Notes: $n = 138$; * $p < .05$; ** $p < .01$; *** $p < .001$; Bootstrap = 10000.

5.1.5.3 The moderating effect of team cohesion

Hypothesis 1-5 indicated that team cohesion played a moderating role in the relationship between functional leadership and team psychological capital. We constructed a moderating model to further examine the moderating effect of team cohesion. The results were shown in Table 5.6. The results showed that the interaction term between functional leadership and team cohesion had a significant positive correlation with team psychological capital ($b = .31$, $s.e. = .09$, $p < .01$), which indicated that team cohesion regulated the relationship between functional leadership and team psychological capital. Therefore, Hypothesis 1-5 was preliminarily supported.

Table 5.6 Results of moderating effect model test at the team level

| Variables | Team psychological capital | |
|-------------------------------------|----------------------------|-------------|
| | <i>Coeff.</i> | <i>s.e.</i> |
| <i>CV</i> | | |
| Superior's gender | .03 | .09 |
| Superior's age | .00 | .01 |
| Superior's organizational tenure | .02 | .02 |
| Superior's working tenure with team | -.01 | .02 |
| Superior's education level | -.14 | .08 |
| <i>IV</i> | | |
| Functional leadership | .38*** | .06 |
| <i>Moderator</i> | | |
| Team cohesion | .30*** | .06 |
| <i>Interaction term</i> | | |
| Functional leadership×Team cohesion | .31** | .09 |
| <i>R</i> ² | .42 | |

Notes: $n = 138$; * $p < .05$; ** $p < .01$; *** $p < .001$.

To present the moderating effects of team cohesion more intuitively, this study referred to the method of Aiken and West (1991) and took the mean value of the moderating variable plus or minus one standard deviation as the grouping standard to conduct a simple slope analysis, and the results were shown in Figure 5.1. Specifically, under high level of team cohesion, functional leadership had a significant and stronger positive effect on team psychological capital ($b = .60, s.e. = .08, p < .001$). At a low level of team cohesion, functional leadership had a weaker positive effect on team psychological capital, and the marginal effect was significant ($b = .16, s.e. = .09, p < .1$). Thus, hypothesis 1-5 was fully supported.

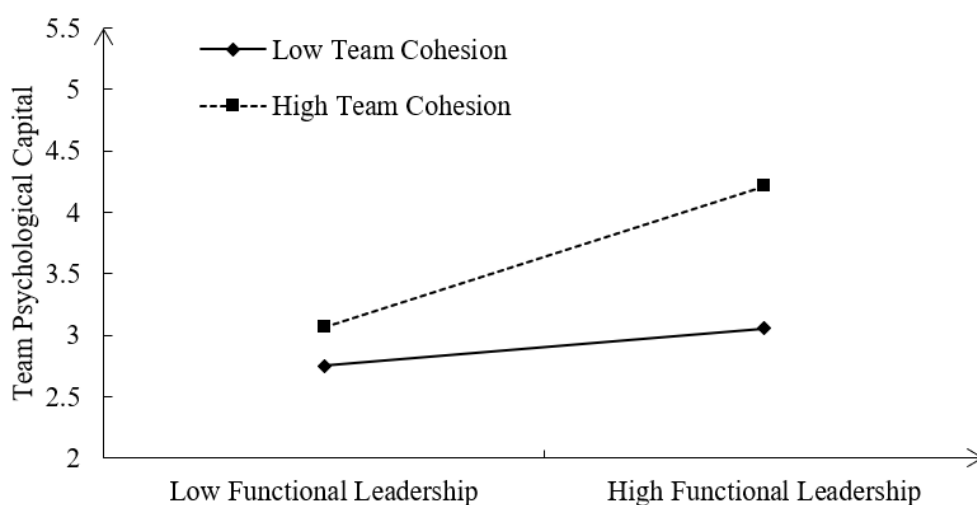


Figure 5.1 Moderating effect of team cohesion on the relationship between functional leadership and team psychological capital

5.1.5.4 The moderated mediating effects tests

Hypothesis 1-6 pointed out that team cohesion moderated the mediating effect of team psychological capital between functional leadership and team performance. The stronger the team cohesion is, the stronger the mediating effect of team psychological capital is. Table 5.7 presented the results of moderated mediating effect tests. Specifically, when the level of team cohesion was high, the mediating effect of team psychological capital on the relationship between functional leadership and team performance was significant (*Indirect effect* = .15, *s.e.* = 0.05, 95%CI = [.06, .24]). However, when the level of team cohesion was low, the indirect effect of team psychological capital on the relationship between functional leadership and team performance was not significant (*Indirect effect* = .04, *s.e.* = .03, 95%CI = [-.01, .11]). There were significant differences between high and low groups (*Indirect effect* = .11, *s.e.* = .03, 95%CI = [.03, .18]), indicating that under different levels of team cohesion, the mediating effect of team psychological capital on the relationship between functional leadership and team performance was significantly different. Therefore, hypothesis 1-6 was supported.

Table 5.7 Results of moderated mediating tests at the team level

| Moderators | Functional leadership → Team psychological capital → Team performance | | |
|------------------------|---|-------------------------|-------------|
| | | <i>Indirect effects</i> | |
| Team cohesion | <i>Coeff</i> | <i>s.e.</i> | 95% CI |
| High (+1 <i>s.d.</i>) | .15 | .05 | [.06, .24] |
| Low (-1 <i>s.d.</i>) | .04 | .02 | [-.01, .08] |
| High-low difference | .11 | .03 | [.03, .18] |

Notes: $n = 138$; $*p < .05$; $**p < .01$; $***p < .001$.

5.2 Results of Study 2

5.2.1 Reliability and validity analysis

Consistent with study 1, this study first tested the reliability and structural validity of the main variables, and the results were shown in Table 5.8. In terms of reliability, authentic leadership (Cronbach $\alpha = .98$), individual psychological capital (Cronbach $\alpha = .88$), organizational identification (Cronbach $\alpha = .78$) and individual performance (Cronbach $\alpha = .89$) were all greater than .78. Therefore, all study variables had good reliability. In addition, in terms of structural validity, authentic leadership ($\chi^2(77) = 122.09$, CFI = .99, TLI = .99, RMSEA = .04, SRMR = .01), individual psychological capital ($\chi^2(54) = 82.77$, CFI = .98, TLI = .98, RMSEA = .03, SRMR = .03), organizational identification ($\chi^2(9) = 48.70$, CFI = .94, TLI = .90, RMSEA = .10, SRMR = .04) and individual performance ($\chi^2(20) = 44.11$, CFI = .99, TLI = .98, RMSEA = .05, SRMR = .02) basically met the standard. Based on this, we believed that all research variables in this study had good structural validity.

Table 5.8 Reliability and structure validity of main variables at the individual level

| Variables | Cronbach α | χ^2 | <i>d.f.</i> | $\chi^2/d.f.$ | RMSEA | SRMR | CFI | TLI |
|----------------------------------|-------------------|----------|-------------|---------------|-------|------|-----|-----|
| Authentic leadership | .98 | 122.09 | 77 | 1.59 | .04 | .01 | .99 | .99 |
| Individual psychological capital | .88 | 82.77 | 54 | 1.53 | .03 | .03 | .98 | .98 |
| Organizational identification | .78 | 48.70 | 9 | 5.41 | .10 | .04 | .94 | .90 |
| Individual performance | .89 | 44.11 | 20 | 2.21 | .05 | .02 | .99 | .98 |

Notes: $n = 478$; $*p < 0.05$; $**p < 0.01$; $***p < 0.001$; χ^2 : chi-squared value, *d.f.*: degree of freedom, RMSEA: root mean square error of approximation, CFI: comparative fix index, TLI: tucker-lewis index, SRMR: standardized root mean squared residual.

In this study, confirmatory factor analysis was used to test the discriminative validity between variables. Specifically, the basic model was constructed and several alternative models were introduced in this study. The results were shown in Table 5.9. Among them, Model 1 was the baseline model (four-factor model), including authentic leadership, individual psychological capital, organizational identification and individual performance. Model 2 was a

three-factor model with individual psychological capital and organizational identification combining into one factor. Model 3 was a two-factor model with authentic leadership, individual psychological capital and organizational identification combining into one factor. Model 4 was a one-factor model with all variables combining into one factor. The results of confirmatory factor analysis showed that the model fit of the baseline model was the best (Model 1, $\chi^2(734) = 820.84$, CFI = .99, TLI = .99, RMSEA = .02, SRMR = .03), which was better than the three-factor model (Model 2, $\chi^2(737) = 1325.34$, CFI = .95, TLI = .95, RMSEA = .04, SRMR = .05), the two-factor model (Model 3, $\chi^2(739) = 2850.04$, CFI = .83, TLI = .82, RMSEA = .08, SRMR = .11), and the one-factor model (Model 4, $\chi^2(740) = 4221.32$, CFI=.71, TLI=.70, RMSEA=.10, SRMR=.13). These results indicated that the main variables in this study had good discriminative validity.

Table 5.9 Confirmatory factor analysis comparing alternative model at the individual level

| Models | χ^2 | <i>d.f.</i> | $\chi^2/d.f.$ | RMSEA | SRMR | CFI | TLI | $\Delta\chi^2 (d.f.)$ |
|---|----------|-------------|---------------|-------|------|-----|-----|-----------------------|
| Model 1 | | | | | | | | |
| Four-factor model: AL, IPC, OI, IP | 820.84 | 734 | 1.12 | .02 | .03 | .99 | .99 | — |
| Model 2 | | | | | | | | |
| Three-factor model: AL, IPC + OI, IP (combining PC and OI) | 1325.34 | 737 | 1.80 | .04 | .05 | .95 | .95 | 504.50*** (3) |
| Model 3 | | | | | | | | |
| Two-factor model: AL + IPC + OI, IP (combining AL, PC, and OI) | 2850.04 | 739 | 3.86 | .08 | .11 | .83 | .82 | 2029.30*** (5) |
| Model 4 | | | | | | | | |
| One-factor model: AL + IPC + OI + IP (combining all variables) | 4221.32 | 740 | 5.70 | .10 | .13 | .71 | .70 | 3400.48*** (6) |

Notes: $n = 478$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; χ^2 : chi-squared value, *d.f.*: degree of freedom, RMSEA: root mean square error of approximation, CFI: comparative fix index, TLI: tucker-lewis index, SRMR: standardized root mean squared residual; AL: authentic leadership, IPC: individual psychological capital, OI: organizational identification, IP: individual performance.

5.2.2 Assessment of common method bias

Although this study adopted the data collection method of multiple data sources and multiple time points to reduce the common method bias, authentic leadership, individual psychological capital, and organization identification were all reported by employees, thus there was a potential common method bias. In order to reduce the influence of common method bias on research results, this study first constructed a baseline model with authentic leadership, individual psychological capital, and organizational identification as the main variables, and then added common method factor on this basis to construct a new alternative model (Podsakoff

et al., 2003). The results showed that the model fit improved with the addition of common method factor (Model without common method factor, $\chi^2(430) = 559.20$, CFI = .99, TLI = .99, RMSEA = .03, SRMR = .02; Model including common method factor, $\chi^2(430) = 504.58$, CFI = .99, TLI = .99, RMSEA = .03, SRMR = .02), but the variance accounted for by common method factor was 10% and did not exceed 25% (Williams et al., 1989). There was no significant change in each fitting index ($\Delta\text{CFI} = .003$, $\Delta\text{TLI} = .002$, $\Delta\text{RMSEA} = .002$, $\Delta\text{SRMR} = .004$) (Y. P. Gong et al., 2022), thus our results were not significantly affected by the common method bias.

5.2.3 Descriptive statistics and correlations

In this study, SPSS 22.0 software was used to conduct descriptive statistics and correlation analysis for all variables, and the analysis results were shown in Table 5.10.

Table 5.10 Descriptive statistics and correlations at the individual level

| | Mean | S.D. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------------------------------|-------|------|-------|--------|------|--------|--------|--------|--------|
| 1. Employee's gender | .44 | .50 | | | | | | | |
| 2. Employee's age | 32.36 | 6.95 | -.07 | | | | | | |
| 3. Employee's organizational tenure | 5.54 | 4.46 | -.00 | .51*** | | | | | |
| 4. Employee's education level | 2.56 | .91 | -.09 | .24*** | .10* | | | | |
| 5. Authentic leadership | 4.65 | 1.01 | -.10* | .09* | -.04 | .12** | | | |
| 6. Individual psychological capital | 4.82 | .73 | -.02 | .04 | -.01 | .17** | .45*** | | |
| 7. Organization identification | 4.35 | .82 | -.06 | .10* | .06 | .04 | .09 | .31*** | |
| 8. Individual performance | 4.99 | .61 | .01 | .26*** | .03 | .19*** | .40*** | .47*** | .28*** |

Notes: $n = 478$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; Gender: 0 = male; 1 = female; Education level: 1 = high school or below, 2 = junior college, 3 = bachelor's degree, and 4 = master's or above.

Authentic leadership had a significant positive correlation with individual psychological capital ($r = .45$, $p < .001$), authentic leadership had a significant positive correlation with individual performance ($r = .40$, $p < .001$), and individual psychological capital had a significant positive correlation with individual performance ($r = .47$, $p < .001$). These conclusions provided preliminary support for the hypotheses of direct effects and mediating effects.

5.2.4 Hypotheses testing

This study mainly examined the impact of authentic leadership on individual performance, the mediating role of individual psychological capital, and the moderating role of organizational identification.

5.2.4.1 The impact of authentic leadership on individual performance

Hypothesis 2-1 suggested that authentic leadership had a positive impact on team performance,

and the results were shown in Table 5.11. The results showed that authentic leadership was positively correlated with individual performance ($b = .12, s.e. = .03, p < 0.001$), thus hypothesis 2-1 was supported.

5.2.4.2 The mediating effect of individual psychological capital

Hypothesis 2-2 proposed that authentic leadership had a positive impact on individual psychological capital, while hypothesis 2-3 proposed that individual psychological capital had a positive impact on individual performance. Table 5.5 presented the results of hypothesis 2-2 and 2-3. The results showed that authentic leadership was positively correlated with individual psychological capital ($b = .32, s.e. = 0.03, p < .001$), and individual psychological capital was positively correlated with individual performance ($b = .30, s.e. = .04, p < .001$). Therefore, hypothesis 2-2 and 2-3 were supported. In addition, hypothesis 2-4 indicated that individual psychological capital mediated the relationship between authentic leadership and individual performance. Table 5.11 also presented the results of the mediation effect test. The results showed that the indirect effect of individual psychological capital on the relationship between authentic leadership and individual performance was significant (*Indirect effect* = .10, $s.e. = .03$, 95%CI = [.05, .16]), thus hypothesis 2-4 were supported.

Table 5.11 Results of main path model test at the individual level

| Variables | Individual psychological capital | | Individual performance | |
|--|----------------------------------|-------------|------------------------|-------------|
| | <i>Coeff.</i> | <i>s.e.</i> | <i>Coeff.</i> | <i>s.e.</i> |
| <i>CV</i> | | | | |
| Employee's gender | .05 | .06 | .07 | .05 |
| Employee's age | -.00 | .01 | .02*** | .01 |
| Employee's organizational tenure | .04 | .08 | -.01* | .01 |
| Employee's education level | -.11** | .03 | .16* | .07 |
| <i>IV</i> | | | | |
| Authentic leadership | .32*** | .03 | .12*** | .03 |
| <i>Mediator</i> | | | | |
| Individual psychological capital | | | .30*** | .04 |
| R^2 | | .22 | | .33 |
| Indirect effects test | | | | |
| Path | Indirect Effect | | <i>s.e.</i> | 95% CI |
| Authentic leadership → Individual psychological capital → Individual performance | .10 | | .03 | [.05, .16] |

Notes: $n = 478$; * $p < .05$; ** $p < .01$; *** $p < .001$; Bootstrap = 10000.

5.2.4.3 The moderating effect of organization identification

Hypothesis 2-5 indicated that organization identification played a moderating role in the relationship between authentic leadership and individual psychological capital. We constructed a moderating model to further examine the moderating effect of organization identification. The results were shown in Table 5.12. The results showed that the interaction term between

authentic leadership and organization identification had a marginal significant positive correlation with individual psychological capital ($b = .05, s.e. = .03, p < .10$), which indicated that organization identification marginally moderated the relationship between authentic leadership and individual psychological capital, but the effect was not significant enough.

Table 5.12 Results of moderating effect model test at the individual level

| Variables | Individual psychological capital | |
|---|----------------------------------|-------|
| | Coeff. | s.e. |
| <i>CV</i> | | |
| Employee's gender | .07 | .06 |
| Employee's age | -.01 | .01 |
| Employee's organizational tenure | .00 | .01 |
| Employee's education level | .10 | .03** |
| <i>IV</i> | | |
| Authentic leadership | .32*** | .03 |
| <i>Moderator</i> | | |
| Organization identification | .26*** | .04 |
| <i>Interaction term</i> | | |
| Authentic leadership \times Organization identification | .05 [†] | 0.03 |
| R^2 | .30 | |

Notes: $n = 478$; [†] $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Similarly, to present the moderating effects of organization identification more intuitively, this study referred to the method of Aiken and West (1991) and took the mean value of the moderating variable plus or minus one standard deviation as the grouping standard to conduct a simple slope analysis, and the results were shown in Figure 5.2. Specifically, under high level of organization identification, authentic leadership had a significant and stronger positive effect on individual psychological capital ($b = .36, s.e. = .04, p < .001$). At a low level of organization identification, authentic leadership had a weaker positive effect on individual psychological capital ($b = .28, s.e. = .03, p < .001$). Thus, hypothesis 2-5 was not supported.



Figure 5.2 Moderating effect of organization identification on the relationship between authentic leadership and individual psychological capital

5.2.4.4 The moderated mediating effects tests

Hypothesis 2-6 pointed out that organization identification moderated the mediating effect of individual psychological capital on the relationship between authentic leadership and individual performance. The stronger the organization identification is, the stronger the mediating effect of individual psychological capital is. Table 5.13 presented the results of moderated mediating effect tests. Specifically, when the level of organization identification was high, the mediating effect of individual psychological capital on the relationship between authentic leadership and individual performance was significant (*Indirect effect* = .11, *s.e.* = .02, 95%CI = [.06, .15]). Similarly, when the level of organization identification was low, the indirect effect of individual psychological capital on the relationship between authentic leadership and individual performance was significant (*Indirect effect* = .08, *s.e.* = .03, 95%CI = [.03, .15]). However, the difference between high and low groups was insignificant (*Indirect effect* = .02, *s.e.* = .02, 95%CI = [-.03, .06]), indicating that under different levels of organization identification, the mediating effect of individual psychological capital on the relationship between authentic leadership and individual performance was insignificantly different. Therefore, hypothesis 2-6 was not supported.

Table 5.13 Results of moderated mediating tests at the individual level

| Moderators | Authentic leadership → Individual psychological capital → Individual performance | | |
|-----------------------------|---|-------------|-------------|
| | <i>Indirect effects</i> | | |
| | <i>Coeff</i> | <i>s.e.</i> | 95% CI |
| Organization identification | | | |
| High (+1 <i>s.d.</i>) | .11 | .02 | [.06, .15] |
| Low (-1 <i>s.d.</i>) | .08 | .03 | [.03, .15] |
| High-low difference | .02 | .02 | [-.03, .06] |

Notes: $n = 138$; * $p < .05$; ** $p < .01$; *** $p < .001$.

5.3 Summary

This chapter mainly tested the theoretical model based on the theoretical hypotheses. Specifically, data analysis and hypotheses tests were carried out in Study 1 and Study 2 respectively in this study. Firstly, a preliminary analysis was made on the reliability and validity of each study to ensure the reliability of the research samples. Secondly, the descriptive and correlation statistics of the research samples were carried out to provide the basis for the research hypotheses. Finally, this study used regression analyses, bootstrap method and other research methods to test the hypotheses of Study 1 and Study 2, and combined the proposed theoretical hypotheses to judge whether the research model was valid. The summary results of

hypotheses test were shown in Table 5.14. This chapter further tested the validity of the theoretical model through the empirical research method, which provides a basis for the subsequent discussion and outlook of the research results.

The investigation involves in-depth data analysis and hypothesis testing conducted separately for Study 1 and Study 2. To ensure the reliability of the research samples, the chapter commences with a preliminary analysis of the reliability and validity of each study.

Subsequently, the chapter delves into the descriptive and correlation statistics of the research samples, laying the groundwork for the subsequent examination of research hypotheses. This exploratory phase not only establishes a baseline understanding of the data but also informs the formulation of hypotheses based on observed patterns and associations.

The core of the chapter involves the application of regression analyses, the bootstrap method, and other research methodologies to rigorously test the hypotheses posited in Study 1 and Study 2. The research methods employed are chosen judiciously to ensure robust and comprehensive testing, and the results are synthesized with the proposed theoretical hypotheses to ascertain the validity of the overarching research model. The culmination of this analytical process is presented succinctly in Table 5.14, encapsulating the summary results of the hypotheses test.

Moreover, the chapter extends beyond mere statistical validation by employing the empirical research method to further test the validity of the theoretical model. This multifaceted approach enhances the robustness of the findings, providing a solid foundation for the subsequent discussion and the outlook on the research results. In essence, this chapter not only serves as a critical examination of theoretical underpinnings but also establishes the empirical foundation necessary for a comprehensive understanding of the research outcomes.

Table 5.14 Summary of research hypotheses test results

| Hypotheses | Results |
|---|-----------|
| Study 1 | |
| H1-1: Functional leadership is positively correlated with team performance. | Supported |
| H1-2: Functional leadership is positively correlated with team psychological capital. | Supported |
| H1-3: Team psychological capital is positively correlated with team performance. | Supported |
| H1-4: Team psychological capital plays a mediating role between functional leadership and team performance. | Supported |
| H1-5: Team cohesion moderates the relationship between functional leadership and team psychological capital, that is, the stronger the team cohesion, the stronger the positive impact of functional leadership on team psychological capital. | Supported |
| H1-6: Team cohesion positively moderates the mediating role of team psychological capital between functional leadership and team performance, that is, the stronger the team cohesion, the more significant the mediating effect of team psychological capital. | Supported |
| Study 2 | |
| H2-1: Authentic leadership is positively correlated with individual performance. | Supported |

| | |
|--|---------------|
| H2-2: Authentic leadership is positively correlated with individual psychological capital. | Supported |
| H2-3: Individual psychological capital is positively correlated with individual performance. | Supported |
| H2-4: Individual psychological capital plays a mediating role between authentic leadership and individual performance. | Supported |
| H2-5: Organizational identification moderates the influence of authentic leadership and individual psychological capital, that is, the stronger organizational identification, the stronger the positive influence of authentic leadership on individual psychological capital. | Not supported |
| H2-6: Organizational identification positively moderates the mediating effect of individual psychological capital between authentic leadership and individual performance, that is, the stronger organizational identification is, the more significant the mediating effect of individual psychological capital is. | Not supported |

Chapter 6: Conclusion and Discussion

Based on the results of the previous empirical research, this chapter elaborated the research conclusions, theoretical contributions, and practical contributions, and discussed the limitations of this study and the prospect of future research.

6.1 Research results and discussion

Combined with social cognitive theory (Wood & Bandura, 1989) and the contingency theory of leadership, this study discussed the influence mechanism and boundary conditions of functional leadership on team performance at the team level, and the influence mechanism and boundary conditions of authentic leadership on individual performance at the individual level. In this research, we adopted the data collection method of multiple data sources and multiple time points to obtain responses from 138 team leaders and 478 employees from 7 enterprises, and adopted the path analysis method. In Study 1, we tested the influence of functional leadership on team performance, the mediating role of team psychological capital and the moderating role of team cohesion. In Study 2, we examined the influence of authentic leadership on individual performance, the mediating effect of individual psychological capital and the moderating effect of organizational identification.

6.1.1 Research results and discussion of Study 1

6.1.1.1 The impact of functional leadership on team performance

In Study 1, the empirical results showed that functional leadership significantly improved team performance ($b = 0.26$, $s.e. = 0.05$, $p < 0.001$) after controlling the leader's gender, age, education level, organizational tenure, and team working tenure with the leader, thus supported Hypothesis 1. Consistent with social cognitive theory (Bandura, 1997; Wood & Bandura, 1989), the research results showed that functional leaders can provide a clear goal for the team, promote team members to understand their mission, build a close connection between team members and the external environment, and improve the feedback of information, which can help team members to be clearer about tasks and division of each other (Morgeson et al., 2009). Therefore, functional leaders can make team members have more initiative to coordinate the

relationship between the team and the team goal, and promote team members to have higher self-motivation and adjustment ability to achieve team goals (Bandura, 1988; Wood & Bandura, 1989) and ultimately improve team performance.

6.1.1.2 The mediating effect of team psychological capital

Study 1 also pointed out that team psychological capital mediated the relationship between functional leadership and team performance. The empirical results showed that functional leadership improved the psychological capital of the team ($b = .42$, $s.e. = .06$, $p < .001$) after controlling the leader's gender, age, education, organizational tenure and team working tenure with the leader. Team psychological capital promoted team performance ($b = .26$, $s.e. = .05$, $p < .001$). Therefore, functional leadership indirectly influenced team performance through improving team psychological capital (*Indirect effect* = .10, $s.e. = .04$, 95%CI = [.04, .17]). Therefore, Hypothesis 1-2, 1-3, and 1-4 were supported. Based on social cognitive theory, people can learn indirectly through observation learning and dynamically adjust their goals according to their own abilities through self-regulation, thus having higher intrinsic motivation to make continuous efforts (Bandura, 1986, 1988). Similarly, functional leadership could promote team members to have a better understanding of team tasks and team goals through situational recognition function (J. P. Santos et al., 2015), strategic recognition function, and cooperation function, thus improve team members' ability and methods to solve problems, and make them to have a higher autonomy to choose the way to achieve goals (Maynard et al., 2017; Zaccaro et al., 2001). Team members can acquire some relevant abilities of leaders by observing and learning from functional leadership, thus they could have higher confidence, stronger will, and maintain a more positive mood and attitude. The improvement of team members in self-efficacy, hope, resilience, and optimism will eventually transform the internal motivation of team members and improve their team performance (Owens & Hekman, 2015; Rego et al., 2019).

6.1.1.3 The moderating effect of team cohesion

In study 1, team cohesion was supposed to moderate the relationship between functional leadership and team psychological capital, and thus moderate the mediating role of team psychological capital between the relationship between functional leadership and team performance. After adding the interaction term between functional leadership and team cohesion, the empirical results of Study 1 showed that team cohesion had a significant moderating effect on the relationship between functional leadership and team psychological

capital ($b = .31$, $s.e. = .09$, $p < .01$). Thus, hypothesis 1-5 was supported. According to the contingency theory of leadership, when considering the influence of a leader on a team, we should not only consider the results of the leader's own behavior, but also consider the characteristics of the team itself. The research results showed that a team with high cohesion could more effectively transform the situational recognition function, strategic recognition function, and cooperation function of functional leadership into the team's own resources, which further strengthens the positive role of functional leadership on team information acquisition, team goal clarity, and team cooperation efficiency. Thus, the positive effect of functional leadership on team psychological capital was strengthened.

In addition, the results of Study 1 showed that the mediating effect of team psychological capital on the relationship between functional leadership and team performance was significant when team cohesion was higher (*Indirect effect* = .15, $s.e. = .05$, 95%CI = [.06, .24]), and this relationship became non-significant when team cohesion was lower (*Indirect effect* = .04, $s.e. = .03$, 95%CI = [-.01, .11]), with a significant difference (*Indirect effect difference* = .11, $s.e. = .03$, 95%CI = [.03, .18]). Thus, Hypothesis 1-6 was supported. Combining social cognitive theory and the contingency theory of leadership, the results suggested that the effect of functional leadership on the social cognitive process of team members should be combined with the degree of team cohesion. When the team cohesion was higher, functional leadership was more conducive to improving the cooperation efficiency among team members, optimizing the team structure, clarifying the team goals, improving the team's sense of self-efficacy, hope, resilience and optimism, and ultimately improving the team performance.

6.1.2 Research results and discussion of Study 2

6.1.2.1 The impact of authentic leadership on individual performance

In Study 2, the empirical results showed that after controlling employees' gender, age, education level and organizational tenure, authentic leadership significantly improved individual work performance ($b = .12$, $s.e. = .03$, $p < .001$), and Hypothesis 2-1 was supported. According to the social cognitive theory, employees acquire relevant experience for learning through indirect observation, and set personal goals by evaluating their own abilities to maintain their continuous efforts (Bandura, 1988; Wood & Bandura, 1989). Authentic leadership is considered to have high self-awareness, relational transparency, internalized moral perspective, and balance processing (Walumbwa et al., 2008). The research results showed that authentic leadership could improve the information transparency between leaders and employees, treat employees

with a sincere and fair attitude, and establish a good and harmonious working atmosphere for employees. Meanwhile, employees will take authentic leadership as their own example, improve and firm their own moral concepts, internalize good values, and fully understand themselves through reflection. In turn, they can better self-regulate and self-motivate, and ultimately improve their personal performance.

6.1.2.2 The mediating effect of individual psychological capital

Study 2 showed that individual psychological capital played an intermediary role between authentic leadership and individual performance. The results showed that, after controlling the employee's gender, age, education level, and organizational tenure, authentic leadership could improve the employee's individual psychological capital ($b = .32$, $s.e. = .03$, $p < .001$), and further improved employees' individual performance ($b = .30$, $s.e. = .04$, $p < .001$). These results indicated that individual psychological capital mediated the relationship between authentic leadership and individual performance (*Indirect effect* = .10, $s.e. = .03$, 95%CI = [.05, .16], supporting Hypotheses 2-2, 2-3, and 2-4. Social cognitive theory points out that people can improve their self-efficacy and self-motivation by observing and learning and adjusting the relationship between personal ability and goal setting (Bandura, 1988; Wood & Bandura, 1989). The research results showed that authentic leaders could present their true selves, establish a transparent and good relationship with employees (Neider & Schriesheim, 2011), and create a fair and open atmosphere. Therefore, authentic leaders could reduce employees' work uncertainty (Leroy et al., 2012), improve their hope and optimism, improve their work autonomy, encourage them to set their own work goals more independently, improve their self-regulation and self-motivation, and enhance their sense of self-efficacy. Employees will also take authentic leadership as an example to further strengthen their moral and value stance and improve their own resilience. The improvement of employees' own psychological capital means that employees have more sufficient confidence and confidence to achieve their personal goals and ultimately improve their personal performance.

6.1.2.3 The moderating effect of organizational identification

In Study 2, we hypothesized organizational identification would moderate the relationship between authentic leadership and individual psychological capital, thus improving the mediating role of individual psychological capital on the relationship between authentic leadership and individual performance. After adding the interaction term of authentic leadership and organizational identification, the empirical results showed that organizational identification

only has a significant marginal moderating effect on the relationship between authentic leadership and individual psychological capital ($b = .05$, $s.e. = .03$, $p < .10$). Thus, Hypotheses 2-5 was not supported. In addition, the results showed that the significant mediating effect of individual psychological capital on the relationship between authentic leadership and individual performance was stronger when organizational identification was higher (*Indirect effect* = .11, $s.e. = .02$, $95\%CI = [.06, .15]$) than when organizational identification was lower (*Indirect effect* = .08, $s.e. = .03$, $95\%CI = [.03, .15]$), with a non-significant difference (*Indirect effect difference* = .02, $s.e. = .02$, $95\%CI = [-.03, .06]$). Thus, Hypothesis 2-6 was not supported, which meant that organizational identification has no significant moderating effect on the mediating effect of individual psychological capital on the relationship between authentic leadership and individual performance.

According to the contingency theory of leadership, the influence of a leader on employees should not only consider the results of the leader's own behavior, but also consider the characteristics of the affected employees themselves (e.g., organizational identification). We suggested that employees with high organizational identification are more likely to regard their superior leaders as representatives of the organization, and thus are more susceptible to the influence of authentic leaders' self-awareness, relational transparency, internalized moral perspective, and balance processing, so they are more willing to trust authentic leaders, open their hearts more, and let go of concerns caused by potential uncertainties. Besides, they are more active in the transparent and open atmosphere, so as to enhance their psychological capital more effectively, and thus improve their performance. But unfortunately, the empirical results did not support our hypotheses. The reason may be that there is a certain correlation between organizational identification and psychological capital. According to the correlation coefficient of this study, there was a strong positive correlation between organizational identification and psychological capital ($r = .31$, $p < .001$), indicating that in our sample, employees with higher organizational identification also have stronger individual psychological capital. Because of the high correlation between organizational identification and individual psychological capital in the sample, we found that the moderating effects of organizational identification on the relationship between authentic leadership and individual psychological capital was only marginal significant. Similarly, organizational identification could not moderate the mediating effects of individual psychological capital on the relationship between authentic leadership and individual performance. For this unexpected result, future studies could try to repeat the moderating effects of organizational identification with samples from other countries, regions, and industries.

6.2 Theoretical contribution

The theoretical contributions of this study mainly include the following aspects.

First, this study explored the impact of functional leadership on team performance at the team level, which enriched the results of functional leadership research. Functional leadership is one of the most important leadership styles to promote team efficiency (J. P. Santos et al., 2015). Previous studies mainly discussed the concept, dimension and measurement methods of functional leadership in depth (Morgeson et al., 2009; J. P. Santos et al., 2015; Stetler et al., 2014). However, there is still a lack of discussion on the results and influence mechanism of functional leadership, and there are even fewer empirical studies related to it. Therefore, by exploring how functional leadership affects team performance, this study found that functional leadership had a positive impact on team performance through empirical research. Further improving the validity of the research results will not only help improve the understanding of functional leadership, but also provide empirical support for the effectiveness and positive significance of functional leadership.

Secondly, this study adopted a multi-level perspective, integrating team level and individual level, to explore the influence of leadership style on team performance and individual performance. Specifically, we mainly discussed the influence mechanism and boundary conditions of functional leadership on team performance at the team level. While authentic leadership was considered to be a very important leadership style conducive to the establishment of a good relationship between leaders and employees (Walumbwa et al., 2008) at the individual level, thus we discussed the influence mechanism and boundary conditions of authentic leadership on individual employee performance. In fact, scholars of leadership studies have always emphasized the use of a multi-level perspective to explore the results of leadership (Bliese et al., 2002), although many scholars have tried to combine the team level with the individual level to conduct the results of leadership style research (Rahmadani et al., 2020; J. Yang et al., 2017), but relevant studies are still limited. Combined with the characteristics of current society and modern enterprise management, this study explores the impact of functional leadership and authentic leadership on individual and team performance from a multi-level perspective, which not only responds to the call of current scholars for multi-level research on leadership style, but also further enriched the research results of functional leadership at the team level. At the same time, this study further complemented the results of research on functional leadership at the team level and authentic leadership at the individual level, improving the understanding of functional leadership and authentic leadership.

In addition, based on social cognitive theory, this study explored the mediating role of team psychological capital between functional leadership and team performance, as well as the mediating role of individual psychological capital on the relationship between authentic leadership and individual performance. At the team level, only a few previous studies have explored how functional leadership affects team results (DeChurch & Marks, 2006; Maynard et al., 2017; J. P. Santos et al., 2015), but few studies have explored how functional leadership affects team performance. In addition, psychological capital is considered to be a very important intermediary mechanism (Amunkete & Rothmann, 2015; M. Kim & Beehr, 2021; D. W. Wang et al., 2021), but these studies mainly focused on the individual level and discussed the mediating mechanism of individual psychological capital, while few studies discussed how team psychological capital explains the influencing mechanism between leadership style and team outcome at the team level. Combined with social cognitive theory, this study points out that functional leadership can promote the cooperation efficiency among team members, improve the information connection between the team and the external environment, clarify the team members' understanding of the team goal, enhance the team work ability, improve the team members' handling of the relationship between the team goal and the team ability, and thus improve the team performance. It could not only improve the understanding of how functional leadership affects team performance and open the "black box" of the impact of functional leadership on team performance, but also further enrich the research on psychological capital at the team level and the related research on social cognitive theory.

At the individual level, previous studies have shown that individual psychological capital is an important mediating variable to explain the influencing mechanism between authentic leadership and individual outcomes (D. W. Wang et al., 2021; Woolley et al., 2010), but these studies mainly regarded individual psychological capital as a resource, and explored how leadership style provides external resources to employees from the perspective of resources, so as to improve employees' work results by improving individual psychological capital. From the perspective of social cognitive theory, this study believed that authentic leadership could help employees better adhere to themselves, promote them to better understand themselves, and coordinate the relationship between their own work goals and work abilities, so as to generate continuous self-regulation and self-motivation, and thus improve individual performance. This study provided a new perspective to explain the mechanism of the influence of individual psychological capital on authentic leadership and individual outcomes, further improved the understanding of individual psychological capital as an intermediary mechanism, and further enriched the research of psychological capital and social cognitive theory at the individual level.

Finally, based on the contingency theory of leadership, this study discussed the moderating effect of team cohesion on the influence of functional leadership on team performance, and the moderating effect of organizational identification on the influence of authentic leadership on individual performance. At the team level, previous studies mainly discussed the antecedents of team cohesion (Mathieu et al., 2015; Paul et al., 2016; Ronen & Mikulincer, 2009) and results (M. H. Chen & Somya, 2018; Tekleab et al., 2016), but few studies have explored the moderating effect of team cohesion. In addition, many researches on team cohesion focused on sports teams, while there were relatively few researches on teams in enterprises. Based on the contingency theory of leadership, this study found that teams with high team cohesion are more likely to transform the support and help of functional leadership into the team's own regulatory ability and incentive ability, thus improved the team's psychological capital and team performance. Therefore, we enriched the research on the boundary regulation of the impact of functional leadership on team performance and the research on team cohesion as a moderating variable, and improved the understanding of team cohesion.

At the individual level, this study took organizational identification as a moderating variable to explore the moderating effect of organizational identification on the influence of authentic leadership on individual performance. Although existing studies have explored organizational identification in depth and had a profound understanding about the organizational identification's antecedents (Demirtas et al., 2017; Niu et al., 2020; Y. Wang et al., 2019) and results (J. Li et al., 2018; C. Zhao et al., 2021), and some studies have also explored the moderating effect of organizational identification (De Clercq & Pereira, 2020; Kozhakhmet et al., 2020), but they are relatively few. Based on the contingency theory of leadership, we hypothesized that employees with higher organizational identification were more inclined to believe in the performance of authentic leaders, and were more able to transform them into self-regulation and self-motivation, thus further improving psychological capital and individual performance. However, the empirical results of this study showed that the moderating effects of organizational identification on the relationship between authentic leadership and individual psychological capital was only marginal significant, and the moderating effects of organizational identification on the mediating effects of individual psychological capital on the relationship between authentic leadership and individual performance was not significant. Therefore, the two hypotheses about the moderating effects of organizational identification were not supported. This showed that there was a close relationship between organizational identification and individual psychological capital, so the moderated mediating effects of individual psychological capital was not significant. Although our

hypotheses were not supported, it still provides some ideas and enlightenment for future research. For example, we could explore the moderating effects of employees' other individual differentiation characteristics on the relationship between authentic leadership and individual psychological capital, such as power distance orientation, collectivism orientation, and proactive personality.

6.3 Practical contribution

This study mainly provided the following practical contributions.

First, managers need to take the initiative to understand the needs of the team to improve team performance. The results of this study showed that functional leadership could improve team performance through improving team psychological capital. Functional leadership emphasizes that leaders need to pay more attention to the internal needs of the team and consider what needs to be done for the team rather than what should be done (Barnett & McCormick, 2016; Hackman & Walton, 1986; Zaccaro et al., 2001). Therefore, leaders should first understand the external and internal environment of the organization, evaluate the working conditions of team members in detail, and then have a more specific understanding of the work needs of team members (J. P. Santos et al., 2015). Secondly, leaders need to provide team members with more specific guidance or plans based on the external environment of the team and the goals and characteristics of the team to help them solve various problems (J. P. Santos et al., 2015). Finally, the leader also needs to go deeper into the team, which not only helps the leader to better understand the needs of the team, but also enables the leader to provide comprehensive help to the team members more accurately, proactively discover the problems within the team, and coordinate the relationship between team members and the division of tasks, thus further improve the cooperation efficiency among team members (J. P. Santos et al., 2015). In addition, according to social cognitive theory, team members' clear understanding of team goals plays an important role in team self-motivation, and team members will also gain relevant experience and self-motivation by observing the leader's behavior (Bandura, 1986; Wood & Bandura, 1989). Based on this, leaders also need to provide team members with information related to organizational goals and team goals, and at the same time try to integrate themselves into the team, and set an example and take the lead.

Second, team members need to enhance mutual understanding and cooperation. The results of this study show that teams with a high level of cohesion are better able to convert the guidance and help of functional leaders into team motivation and ability, and further strengthen

team performance, which means that the higher the level of team cohesion, the more positive impact of external factors can be improved. Based on this, team members should first strengthen their team awareness and responsibility, and maintain a positive attitude towards the team (J. V. Chen et al., 2017; Hill et al., 2019), and actively adopt the approach of knowledge and information contribution to maintain the transparency of the relationship within the team (Cui, 2017; Mathieu et al., 2015), and adopt behaviors conducive to teamwork as much as possible (Peng et al., 2019). In addition, many studies have shown that managers play a very important role in promoting team cohesion (M. H. Chen & Somya, 2018; Chiniara & Bentein, 2017; B. J. Kim & Kim, 2014; Zheng et al., 2015), therefore, managers also need to adopt various effective ways to promote a good relationship among team members, which refers to cooperation efficiency. On the other hand, at the beginning of team building, organizations should also consider the relevant characteristics of team members, such as the surface diversity and deep diversity of team members (Kaufmann & Wagner, 2017; Knapp et al., 2015; Woehr et al., 2013), these factors will also determine whether team members can work better together in the future.

Third, managers need to maintain an open and transparent relationship with their employees. The results of this study show that authentic leadership can improve employees' personal performance by improving their psychological capital. Authentic leadership is a leader who treats employees honestly and fairly, encourages employees to internalize moral values, and makes information transparent. In the Internet era, there is less and less information asymmetry between organizations and employees, and employees are more eager to obtain more comprehensive and transparent information. In particular, the new generation of employees continue to enter the workplace, and the role of authentic leaders is more prominent. Therefore, managers should first act as authors, firm their own beliefs, adhere to moral value standards, and establish a good moral image. Secondly, leaders need to have a good understanding of themselves and keep their internal and external consistency. They also need to ensure openness and transparency without bias in their behaviors. Only in this way can employees' concerns be reduced and their trust be enhanced (Walumbwa et al., 2008; Weischer et al., 2013). In addition, existing studies also show that some leaders with positive personality traits (e.g., self-esteem, optimism, and universal values) are more likely to show authentic leadership style (S. M. Jensen & Luthans, 2006; Michie & Gooty, 2005; Randolph-Seng & Gardner, 2013). Therefore, when selecting leaders, organizations also need to consider whether the candidates have corresponding personality traits. In addition, organizations can also improve the authenticity of leaders by providing a variety of training (Azanza et al., 2013; L. Baron, 2012).

Fourth, managers and employees need to further improve employees' organizational

identification. This study did not support the moderating effects of organizational identification on the relationship between authentic leadership, individual psychological capital, and individual performance, but this may be the results of the high correlation between organizational identification and psychological capital in our sample. In fact, like psychological capital, organizational identification plays a significant role in promoting individual performance. For example, F. Zhang et al. (2021) found that psychological capital could improve employees' job satisfaction by enhancing their organizational identification, while Q. S. Chen et al. (2017) found that organizational identification could improve employees' psychological capital. Based on this, managers and employees need to pay attention to the important role of organizational identification. First of all, employees need to improve their good attitude toward the organization as much as possible, and promote themselves to become a real member of the organization psychologically, which can also improve their passion for work and regard organizational work as an indispensable part of their life (Astakhova & Porter, 2015). For managers, who are often regarded as representatives of the organization, they need to take the initiative to take various effective behavioral ways to enhance employees' organizational identification, such as providing more opportunities for employees to participate, taking responsibility for employees, showing them care and their own values (Freire & Gonçalves, 2021; Lythreatis et al., 2019). In addition, existing studies also show that the social image displayed by an enterprise will also have a huge impact on employees' organizational identification (Afsar et al., 2018; Cheema et al., 2020), enterprises should also actively invest in various social practices to establish a good corporate image, which is conducive to improving employees' good understanding of the organization. For the internal environment of the enterprise, the organization can also promote the fairness within the organization, shape the good working atmosphere within the organization, and strengthen employees' organizational identification (Adamovic et al., 2020; Asadullah et al., 2017; Soenen & Melkonian, 2017).

6.4 Limitations and directions for future research

There are still some limitations in this study, which need to be further improved.

First, based on the perspective of social cognitive theory, this study explores the mediating role of team psychological capital on the relationship between functional leadership and team performance, as well as the mediating role of individual psychological capital on the relationship between authentic leadership and individual performance. However, many current studies have proposed other mechanisms by which authentic leadership affects performance.

For example, Wei et al. (2018) found that authentic leadership can enhance employees' work performance by improving their work participation based on self-reinforcement theory. In addition, as mentioned above, psychological capital is also considered to be an important mediating variable on the relationship between authentic leadership and individual outcomes. For example, Rego et al. (2012) based on the perspective of social exchange theory, pointed out that authentic leadership can improve employees' psychological capital through social exchange, thus improving their creativity. Based on social information processing theory, Y. Hu et al. (2018) believed that authentic leaders can promote employees' proactive behaviors through psychological capital. Although there are relatively few studies on the mechanism of functional leadership's impact on team performance, there may also be a potential intermediary mechanism. Therefore, future research on the effects of functional leadership and authentic leadership on team and individual outcomes can further explore whether there are other mediating variables that can explain other potential influencing mechanisms from other theoretical perspectives.

Secondly, based the contingency theory of leadership, this study explores the moderating effect of team cohesion on the indirect impact of functional leadership on team performance through team psychological capital, and the moderating effect of organizational identification on the indirect impact of authentic leadership on individual performance through individual psychological capital. These two moderating variables are related to the characteristics of the team or individual. Future studies can further explore the moderating roles of other team or individual characteristics. For example, in the study of authentic leadership, Y. H. Mao et al. (2022) found that the employees' flow experience could moderate the relationship between authentic leadership and employee resilience. In addition, the contingency theory of leadership points out that the influence of leadership on the team or individual should consider not only the role of the leader's own behavior and the characteristics of the team or individual, but also the characteristics of the leader and the influence of the external environment. For example, Oh and Oh (2017) found that the impact of authentic leadership on employee turnover intention is affected by the size of the organization. F. J. Li et al. (2014) found that authentic leadership could improve their in-role performance by improving their perception of fairness in interpersonal interaction, while Chinese traditional culture could strengthen this relationship. Yagil and Medler-Liraz (2014) found that leaders' emotions could moderate the impact of authentic leadership on employee authenticity. Therefore, future research can explore whether other types of variables will moderate the impact of functional leadership on team performance, and the impact of authentic leadership on individual performance.

Finally, this study used the method of questionnaire survey to collect data and conduct

empirical analysis. Although this study adopted the collection method of multi-time points and multi-data sources, which could only reduce the influence of common method bias on the research results as much as possible, the data collected were still cross-sectional data in essence. Therefore, the causal relationship between variables is not reflected in the operation, and the time factor is not taken into account in the research design. Future research can consider using a variety of research methods for empirical testing (e.g., situational experiments and longitudinal studies) to further improve the effectiveness of the research results. In addition, the samples of this study are mainly from Chinese enterprises, and future studies can collect and repeat experiments from countries with different cultures, and analyze whether there are differences in the impact of functional leadership and authentic leadership on team and individual performance in the cultural context of different countries.

6.5 Summary

This chapter mainly summarizes and discusses the results of the research, analyzes the theoretical contribution and practical implication, and expatiates the limitations and the prospect of the future research. This chapter serves as a comprehensive synthesis and discussion of the research findings, offering a thorough exploration of both theoretical contributions and practical implications. The analysis delves into the nuanced aspects of how the research outcomes align with and enrich existing theoretical frameworks. Moreover, it assesses the practical relevance of the findings, considering their potential applications in real-world organizational settings.

In addition to highlighting the strengths and contributions of the research, this chapter candidly addresses the encountered limitations. These limitations are critically examined, providing insights into the constraints that may have influenced the study's outcomes. Such reflections contribute to a more nuanced understanding of the research context and offer valuable guidance for future studies aiming to build upon or address these limitations.

Furthermore, the chapter extends its gaze into the horizon of future research. It outlines potential avenues and areas of interest that could be explored to expand upon the current study. This forward-looking perspective provides a roadmap for scholars and researchers interested in advancing the field, identifying gaps that warrant further investigation.

By navigating through the results, theoretical contributions, practical implications, limitations, and prospects for future research, this chapter offers a holistic and reflective

overview. This comprehensive analysis not only synthesizes the research journey but also lays the groundwork for ongoing scholarly discourse and exploration in the domain.

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